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A Formative Analysis of the Full Integration of Students with Severe and Profound Disabilities in Age-Appropriate Elementary School Classrooms

Nancy Cheshire Rosenblatt
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A Formative Analysis of the Full Integration
of Students with Severe and Profound Disabilities in
Age-Appropriate Elementary School Classrooms

By

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ABSTRACT

This research was conducted in a large urban elementary school where six students with severe and profound disabilities (SPD) were integrated fully in age-appropriate classrooms. The purpose of the research was to collect evidence regarding the effectiveness of this full-integration program. The results were as follows:

- . Reading and math achievement scores were not affected by the presence of an SPD student in the classroom except for in grade 4 where apparently math achievement was affected adversely.
- . Fourth graders in classes with a fully-integrated SPD student had more positive attitudes about persons with disabilities than students in the control classes.
- . Parents and students responded positively to questions about the program. The results of a staff questionnaire were mixed with responses indicating a need for effective communication, training, and voluntary participation.
- . There was initial positive social interaction between SPD students and their general education peers that was sustained throughout the school year.

- . Analysis of acquisition of adaptive behavior skills revealed a decline in daily living skills.
- . There was no significant difference between the proportion of IEP objectives mastered by SPD students when these students were integrated fully and when they were in self-contained classrooms.
- . Teachers in classes with a fully-integrated SPD student planned lessons for small groups and individual students more frequently than teachers in control classes. Additionally, the teachers in the experimental classes initiated individual instruction more often than the control teachers and 50% of these initiations were with the SPD students.

These findings underscore the many factors which must be considered when integrating SPD students in general education environments. Additionally, this analysis provides mixed results which point to the need for further research.

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Special thanks go to six exceptional children who paved the way for others. I am particularly grateful to their parents for their belief in the full-integration program, in the staff, and in me. Their teachers, Carol Bliefernich, Alicia Copeland, Jackie Inge, Joe Alfonsi, Amy Redford, Linda Taylor, and Julie Laidlaw, and the assistants, Monty Shank, Roseanne Hill, Lillie Reed, and Marilyn Levine, were pivotal in making the program a success. I am indebted to the school division for recognizing the importance of full integration, providing staff, and permitting me to assess the various components of this program.

For my son, J. P. McWatters, I hope I have set an example that he will emulate. As a doctoral student himself, he is on his way.

Throughout the process of my pursuing my doctoral degree, I have had the support of my coworkers, Art Taylor, Joanne D'Agostino, Barbara Dixon, Mary Adams, and Jan Dearing, and my friends, Lisa Cruz and Billie Marland. I appreciated their encouragement and understanding. Dr. Joe Benson and Dr. Sid Vaughn, planning specialists, and Dr. Jack Robinson, a superior statistician, devoted countless hours lending their expertise. They, too, have my gratitude.

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Chapter 1

Introduction

Placement of students with disabilities may range from no exposure to general education to full integration or full inclusion in general education classes. In ever increasing numbers, students with disabilities are being educated in general education classrooms. The question of the extent to which students with severe and profound disabilities (SPD) should be included in general education classrooms is one of concern to general and special educators alike.

For the purposes of this study, "full integration" is defined as an organizational technique where a student, who might otherwise not be included, is a full-time member of a general education class. Although, throughout the literature, the terms are used interchangeably, "full integration," rather than "full inclusion," is used because the severely and profoundly disabled (SPD) students in this study were not in their neighborhood schools. When students are in the schools they would attend were they not disabled, the process would be referred to as "full inclusion." This researcher's application of the terms is based on

definitions provided by the office of special education services in the school division where the study was conducted (1992).

In all, much is as yet unknown about the outcomes realized when SPD students are integrated fully in age-appropriate general education elementary school classrooms. Questions being raised include: Is the academic achievement of general education students affected by the presence of SPD students in their classes? What are the attitudes of students, parents, and staff regarding full integration? Are there changes in the SPD students' adaptive behavior? Will the educational progress of SPD students who are integrated fully be greater than when they were in self-contained settings? Is there positive social interaction between nondisabled and SPD students? Are there additional demands on general education teachers' time when an SPD student is integrated fully? Taken together, these questions are those which warrant further analysis as parents, educators, politicians, and taxpayers demand documentation regarding innovative practices in public school classrooms across the nation.

Present research does provide preliminary answers to some of the questions that have been posed. For example, anecdotal feedback and preliminary empirical evidence have shown that the academic achievement of classmates of children with significant disabilities is not being affected by inclusion (Vandercook et al., 1991). The available evidence comes from four studies, none of which specifically addresses the full integration of SPD students.

Research on peer attitudes provides evidence that experiencing direct, structured contact with persons with disabilities promotes more positive attitudes in students without disabilities (Armstrong, Rosenbaum, & King, 1987; Cates et al., 1990; DeBevoise, 1986; Esposito & Reed, 1986). Armstrong et al. (1987) report that social interaction between able-bodied and disabled children improves the able-bodied children's attitudes toward their disabled peers. These authors further conclude that "buddy-type programs" are successful interventions whereas the Kids-on-the-Block program (in which puppets simulate persons with disabilities) had no measurable impact on attitudes. Specific data, such as that which will be provided in

the present analysis of attitudes of students in classes with a fully-integrated SPD student, will provide additional evidence regarding the effects of full integration on elementary school students.

Research on public and parent attitudes toward persons with disabilities has been being conducted for decades. Much of this research (Chattaway & Madak, 1981; Rosenbaum, Armstrong, & King, 1987; Sandler & Robinson, 1980) suggests that opportunities for exposure to and familiarity with persons with disabilities can have a positive influence on attitudes toward persons with disabilities. Little research exists that specifically addresses public and parent attitudes toward integrating students with severe disabilities in general education classes. However, data are available that indicate parents' attitudes toward the concept of integration are generally positive (Johnson & Vandercook, 1991; McDonnell, 1987; Rosenbaum et al., 1987). The present analysis will add to the available data specific information on the attitudes of parents of general education and SPD students in classes where an SPD student is integrated fully. Parent support of a program is critical to its

success or failure. Attitudes will determine whether the full-integration program is supported or is not supported.

Data regarding staff and teacher attitudes about full integration are sparse. Researchers have found that positive changes in teacher attitudes occur during the integration process (Giangreco, Dennis, Cloninger, Edelman, & Schattman, 1993; West & Cummins, 1980). Others (Rainforth, 1992; York, Vandercook, Macdonald, Heise-Neff, & Caughey, 1992) who examined attitudes of staff toward full integration have found these attitudes to be positive. Throughout the literature regarding teacher attitudes toward integration, there is an emphasis on the importance of good communication among all staff in a school, including those directly involved in integration efforts and those who are not. The present study will solicit the attitudes of all the staff in the school where the full-integration program has been instituted. As with the parents, staff input and support are crucial. Positive attitudes could result in support of the full-integration program; negative attitudes could result in lack of support.

Another area to be investigated is the nature of social interactions between students with severe disabilities and those without severe disabilities. Researchers have long investigated social interactions between students with disabilities and their peers without disabilities. Much of the extant research has been conducted in preschool settings (Anderson, 1983; Baumgart, 1982; Falvey, 1981; Greenwood, Walker, Todd, & Hops, 1976; Haring & Lovinger, 1989; Strain, 1977; Strain, 1983; Strain, Shores, & Timm, 1977). In these studies, as well as those of school-aged students (Anderson & Goetz, 1983; Brinker, 1985; Ragland, Kerr, & Strain, 1978) the authors report positive interaction between students with disabilities and those without disabilities. The present study provides support for earlier research and provides specific evidence of the effectiveness of the integration model in the school where the research was conducted.

Socialization, communication, and daily living skills constitute what is referred to in the present study as adaptive behaviors. Accumulated research suggests that these skills are enhanced in integrated versus segregated settings (Sailor et al., 1989). This

analysis will provide additional documentation regarding the acquisition of adaptive behaviors by fully-integrated SPD students.

Brinker and Thorpe (1984) and Wang and Baker (1986) have provided evidence that special education students who spend all or part of their day in general education classrooms (mainstreamed) and having various disabilities, not severe and profound, attain a greater proportion of IEP objectives than their segregated counterparts. In the present analysis, the number of IEP objectives mastered by each integrated SPD student in 1992-1993 will be compared to the total number of objectives in the IEP. This proportion will be compared to the proportion of objectives mastered on the IEP in the past school year, 1991-1992, in a segregated setting. Mastery of a greater proportion of objectives in an integrated setting than in a self-contained setting would be one indication of positive educational progress for SPD students.

The final area investigated in this analysis is the demands made on teachers' time of certain instructional duties, behavior management, and conferring and consulting with staff and parents when a

student with severe disabilities is integrated fully in the class. General education classroom teachers voice concern about the demands on their time when an SPD student is integrated in their class, especially when necessary tasks detract from instructional time for students without disabilities. Although the literature is replete with information on how to include students with severe disabilities in general education classrooms (Biklen, 1985; Dover, 1994; Piuma, Halvorsen, Murray, Beckstead, & Sailor, 1983; Shinsky, 1990; Stainback & Stainback, 1992; York, Vandercook, Macdonald, & Wolff, 1989), none was found concerning the analysis of time demands of teachers in fully-integrated classrooms. It is reasonable to assume that the time demands would be greater.

As cited, there are data available that make reference to the various components of a full-integration program. There are no comprehensive studies available which examine these all of these components (i.e., academic achievement; parent, student, and staff attitudes; adaptive behavior change; mastery of IEP objectives; social interaction; and demands on teachers' time) in one full-integration

program. This study will fill the void of comprehensive research on the full integration of students with severe disabilities in general education classes. The following section will describe the background of the full-integration program studied in this formative analysis.

Background

The six SPD students in this study attended a large urban elementary school which, since the fall of 1988, had served most of the school district's elementary school students who had an SPD label. The school also housed a full complement of approximately 600 general education students in kindergarten through fifth grade.

Prior to the 1992-1993 school year, all of the SPD students in this school were served in self-contained special education classes. SPD students' opportunities to interact with their nondisabled peers were limited to several special programs supported by certain teachers and volunteer general education students; and, to the school cafeteria, library, hallways, and assemblies.

During the summer of 1991, the school principal, the school special education program coordinator, the director of special education services for the school district, and several general and special education teachers began to discuss the possibility of including SPD students in general education classrooms during certain parts of the day. During the 1991-1992 school year, the principal and several teachers continued to discuss this idea and to learn more about the concept of "inclusion."

In February, 1992, the principal presented the concept of full integration to the staff (teachers and teacher assistants) and parents of the elementary school. Throughout the spring, the principal held informational meetings to explore the concept and to solicit questions, comments, and suggestions from the staff and parents. Teachers' concerns about full integration led the staff to opt for partial integration of SPD students during the 1992-1993 school year.

During the summer of 1992, after having taken a Virginia Commonwealth University class on inclusion, a group of seven teachers (general and special education)

asked the principal (this researcher) to revisit the idea of full integration. The teachers suggested that a limited number of SPD students be integrated fully in age-appropriate classes. The principal agreed to support the program.

One week later, the interested teachers met to develop criteria for the selection of SPD students to be integrated, to choose the SPD students, and to determine which teachers might include these students in their general education classes. The teachers also met to choose a special education teacher who would collaborate with the teachers of the fully-integrated students and who would work with the integrated SPD students and the teacher assistants assigned to the program.

Next, parents of the six SPD students who were selected to participate were contacted to solicit permission for their children's participation in the full-integration program. All of the parents accepted the opportunity, although two parents deliberated for several days before making the decision.

Approximately two weeks after the initial planning meeting, a consultant, who recently had been involved

with the Virginia Statewide Systems Change Project, was brought in to facilitate the general and special education teachers' development of IEPs for the integrated students. This consultant assisted the teachers in adapting lessons and activities to include SPD students.

In September of 1992, six SPD students were placed in six separate age-appropriate general education classrooms. Two students were integrated in the first grade, one in the second grade, one in the third grade, and two in the fourth grade.

This study will examine various facets of this school's full-integration program (see Appendix A for a description of the model). As this analysis took place throughout the initial year of the program, it is a formative analysis. Its results will be used to gain information which will help evaluate the effectiveness of an educational model being used increasingly in our nation's schools and to determine program improvement for the following year.

Statement of the Problem

The practice of full integration without empirical support of its effectiveness has divided special education into two distinct camps, full inclusionists and "a new extremist group to which the full inclusionists inadvertently gave life, the reactionaries who champion the status quo . . . " (Fuchs & Fuchs, 1994). Additionally, the practice of full integration could alienate special and general educators from each other as they struggle to implement programs whose outcomes are unknown.

A range of questions exists regarding the impact of (this model of) full integration on the fully-integrated SPD students, their general education peers, parents, and staff. These questions include:

- 1) Will the presence of an SPD student have any effect on the academic achievement of the general education students in the class where he/she is integrated fully?

- 2) Are the attitudes of general education students influenced by the presence of an SPD student in their class?

- 3) How do the students, parents, and staff respond to questions about the full-integration program?
- 4) Is there positive social interaction between general education students and their SPD classmates?
- 5) Are there changes in the adaptive behaviors of fully-integrated SPD students?
- 6) Will the educational progress of SPD students change when these students are placed in general education classes?
- 7) Are there differences in the demands on teachers' time in classes in which an SPD student is integrated fully and in classes in which there is no SPD student?

Hypotheses of the Study

The following hypotheses are designed to provide answers to the research questions:

- 1) There will be no difference in math or reading achievement, as measured by the Iowa Tests of Basic Skills (ITBS), of first, second, third, and fourth graders in classes where a student labeled severely and profoundly disabled (SPD) is integrated fully and in

first, second, third, and fourth grade classes where an SPD student is not integrated fully.

2) The attitudes toward students with disabilities of fourth graders with a student labeled SPD fully integrated in their class will be more positive than the attitudes of fourth graders in a class where an SPD student is not fully integrated.

3) Parents, staff, and students will respond positively to open-ended and closed-ended questions relating to the full integration of an SPD student in a general education class.

4) In classes with a fully-integrated SPD student, there will be initial and continuing positive social interaction between nondisabled and SPD students.

5) There will be positive changes in the adaptive behaviors, as measured by the Vineland Adaptive Behavior Scales, of students labeled SPD when those students are integrated fully in general education classes.

6) Students labeled SPD who are assigned to general education first, second, third, and fourth grade classes will master a greater proportion of the

objectives on their individualized education programs (IEPs) than they did when they were in self-contained classes.

7) There will be no significant difference in the time-task demands of teachers, as recorded on a time-task log, in classes with a fully-integrated SPD student and in classes without a fully-integrated SPD student.

Rationale of the Study

The Education of All Handicapped Children Act of 1975 (Public Law 94-142) mandated a "free and appropriate education" in the "least restrictive environment" (LRE) for all students with handicaps. In 1990, Public Law 101-476 amended Public Law 94-142. This law, the Individuals with Disabilities Education Act (IDEA), reaffirms the tenets of Public Law 94-142 and adds guidelines for providing for the transition of disabled persons into the community. These laws mandate the integration into general education classes of students with disabilities. Integration in schools is the first step to the integration of the community at large. "Integration in school is essential if

integration into the community at large is to be achieved" (Vandercook & York, 1989, p.3).

Federal and state education laws call for the education of students with disabilities in the LRE with the presumption being that primary placement with appropriate supports (i.e., staff, materials, and equipment) in regular classrooms in proximity to peers without disabilities is preferable to the past practice of "refer-and-remove" (Danielson & Bellamy, 1988). Although SPD students exhibit serious intellectual, physical, emotional, and/or social difficulties, there is some evidence that this does not preclude their participation in regular school programs and activities (Brown et al., 1991; Cates, McGill, Brian, Wilder, & Androes, 1990; Schnorr, 1990; York & Vandercook, 1991; "Zero-exclusion," 1991). Programs are being developed to help SPD students capitalize on their learning potential. According to Stainback and Stainback (1985a, 1985b), the focus of these programs is on what SPD students can do and on their interactions with their peers in age-appropriate activities and settings.

Building on the Stainback's research, Androes (1990) suggested the direction of the integration

movement to be toward more opportunities for SPD students to be included with general education students. Andrees theorized that almost any activity can be modified for the student who is labeled severely and profoundly disabled and assigned to a regular classroom. Presenters at the November, 1991, annual conference of The Association for Persons with Severe Handicaps (TASH) further substantiate the strength of the integration movement. Discussions emphasized educational practices in integrated settings (Mangino, Syryca, & Salisbury, 1991; Meyers, 1991; Rickabaugh, Cawiezell, Skogen, & Thomas, 1991; Strully, Ford, Forest, & Sapon-Shevin, 1991), the effects of successful systems change programs (Dangerfield, Herbert, Arceneaux, Washington, Aucion, & Aupied, 1991; Rivers, Hamilton, & Sharpton, 1991; Stevenson et al., 1991), and social relationships between students who are severely intellectually disabled and their peers without disabilities (Brown, 1991; Cardoso, 1991; Denny & Smith, 1991). The TASH leadership poses that research should not address whether students with disabilities should be integrated in general education classrooms with their peers. Instead, they contend

that research must be designed to gather the necessary data to help in the design of more effective and creative ways to expand the educational and social opportunities of students with all levels of ability and diverse needs (Giangreco & Putnam, 1991).

The literature suggests that benefits can accrue to the general and the special education students involved in integration programs (DeBevoise, 1986; Stainback & Stainback, 1985a). Benefits reported for students with severe disabilities include their learning how to function in ever-changing environments. Stainback and Stainback (1985a) assert that, in integrated settings, students with severe disabilities learn to perform skills among different persons, places, materials, and language cues; and they can learn when to accept assistance and when to indicate, appropriately, a desire to function independently. Also, these students can establish social and effective relationships that can become reciprocal in nature. Even so, scant empirical evidence is available to bolster these claims. "In combination with an inclusionary values base and sound logic and theory where data continue to be absent, additional research

will serve as an important impetus to shape educational policy and practice" (Giangreco & Putnam, 1991, p. 265). Empirical data will be presented in this study to document possible changes in the adaptive behavior of SPD students and in the social interactions of SPD students and their nondisabled peers. The results will provide information on the effectiveness of the full-integration model in this setting.

In summary, the issues that this study examines are important for a number of reasons. First, the study will provide empirical data on the full-integration of students with severe and profound disabilities in age-appropriate general education classes in a suburban elementary school. Second, this research will provide the school where the project was instituted with direction in planning for the following year. Third, the study will provide school divisions interested in developing division-wide plans documentation concerning the strengths and possible weaknesses of a full-integration program. The results of this research will enable school divisions to make decisions regarding implementation of a full-integration model based upon empirical evidence of

effectiveness rather than upon ideology or personal belief. Finally, this study will provide evidence that may be used better to serve the needs of students with disabilities as well as students without disabilities.

Definition of Terms

The Education of All Handicapped Children Act of 1975 (Public Law 94-142) - The law which mandated a free and appropriate education, in the least restrictive environment (LRE), for all students with handicaps.

Least restrictive environment (LRE) - That environment which provides a disabled student, to the extent that it is not detrimental to him, those opportunities he might have were he not disabled.

Individuals with Disabilities Education Act, IDEA, (Public Law 101-476) - This 1990 law amended Public Law 94-142 reaffirming its tenets and adding guidelines for providing for the transition of disabled persons in to the community.

Full integration - This is an organizational technique wherein a student, who might otherwise not be

included in a general education class, is a full-time member of an age-appropriate general education class.

Full inclusion - This is an organizational technique wherein a student, who might otherwise not be included in a general education class, is a full-time member of an age-appropriate general education class in his home school.

Home school - This is the school which is attended by all of the children in a given neighborhood regardless of their abilities.

Partial integration - This is an organizational technique wherein a student, who might otherwise not be included in a general education class, is included for certain activities, usually, nonacademic.

Age appropriate - For the purposes of this research, this meant that the student was within approximately a year of the average age of students in that grade level. (In some grade levels, there is a range of three years of age. This concept of "age appropriate" was developed at the school level by the teachers who would be a part of this full-integration project.)

Severely and profoundly disabled (SPD) - Students with this label have serious cognitive impairments and, to varying degrees, physical disabilities (Virginia Department of Education).

Formative analysis - This is a program analysis for which data about educational programs are gathered while the program is developing (Scriven, 1967).

Virginia Statewide Systems Change Project - This was a five-year federally-funded effort which provided on-site consultation and technical assistance to help certain school divisions (not the one where this study was conducted) develop quality educational programs for students with disabilities.

Limitations of the Study

This study was limited to those classes where teachers agreed to participate. Therefore, it is not possible to generalize the results of this study to classes where the participants are not self-selected.

No kindergarten classes participated as general education kindergarten is a half-day program in this district and the five and six-year old SPD students enrolled in this school were in a full-day program.

Because participation in the program was voluntary and support staff was limited, full integration was only available to six SPD students.

The conduct of the present study revealed that many of the school staff members involved in the program were not as prepared to participate as they should have been. Advanced planning and training were not adequate due to the short time between the decision to integrate students fully and the first day of school.

Overview of the Remaining Chapters

This chapter has included an introduction, a statement of the problem, the hypotheses of the study, a rationale for the study, the definition of terms used in the study, and limitations of the study. The chapters which follow include Chapter 2, a review of the literature; Chapter 3, which presents the methods and procedures of the study; and Chapter 4, which presents the results of the study. In Chapter 5, the researcher discusses the results and makes recommendations for future research.

Chapter 2

Literature Review

The literature relating to the full integration of students labeled severely and profoundly disabled (SPD) contains scant empirical evidence relating to the effectiveness of this practice. Thus, there is a need for increased research which may support those who favor full integration or full inclusion as well as those who feel this practice might harm students. "We cannot allow our belief in mainstreaming to blind us to the need to evaluate the outcomes of our programs if we are responsible professionals" (Hocutt, Martin, & McKinney, 1991, p. 26). Specifically, there is a need for additional research that addresses the academic achievement of general education students in a fully integrated classroom; student, staff, and parent attitudes toward the practice of full integration; social interaction between disabled and nondisabled classmates; adaptive behavior changes in students with disabilities who are integrated fully; IEP skill acquisition of the students with disabilities; and, the time-task demands of teachers.

To build a conceptual framework for this study, a brief history of special education is presented. In addition, a review of the professional literature as it relates to each of the following areas is presented: student achievement of general education students in an integrated setting; student, parent, and staff attitudes toward full integration; social interaction in an integrated setting; adaptive behavior changes of SPD students in an integrated setting; IEP skill acquisition in an integrated setting; and, time-task demands of teachers in integrated classrooms. Finally, a summary of the literature review will be presented.

History of Special Education

Special education began in the United States in 1823 with the establishment of the first state school for the deaf in Kentucky. Federal involvement began in 1857 with the establishment of the Columbia Institution for the Instruction of the Deaf and Dumb, and the Blind. Public school special education began in Boston in 1869 with a public day school for the deaf (Hocutt et al., 1991).

During the early 20th century, as large numbers of students began being served by public schools, it became a common practice to separate students who might be problematic in some way (Skrtic, 1987). At the same time, the IQ test became commonly used to justify students' placement in special classes (Wang, 1987).

Through the first half of the 20th century and until the 1960s, special education continued to be provided in separate classes for children having special conditions (Weintraub, 1971). Where special education programs had been established, special class placement was preferred over residential placement (Hocutt et al., 1991).

Across the nation, throughout the 1960s and the 1970s, progress was being made in getting children previously excluded from public schools into some form of educational program. These early special education programs had few resources and were staffed by low-paid, unqualified personnel. Additionally, early special education programs often were forced to be separate from the general public education program (Winners All, 1992).

An entirely separate category from other students with disabilities was comprised of children with severe disabilities. These children often were institutionalized in large public institutions. Investigations during the early 1970s revealed that "no meaningful treatment programs were then provided in many of these institutions and unsanitary and abusive conditions often prevailed" (Winners All, 1992, p. 6).

Legal decisions began to specify the criteria to be followed with regard to placement decisions. The results of two California cases, Diana v. State Board of Education (1970) and Larry P. v. Riles (1972), were injunctions against group testing, requirements that tests be developed and standardized for different cultural and language subgroups, and requirements that parents give their consent for their children to be placed in special education (Hocutt et al., 1991). The consent agreement in Pennsylvania Association for Retarded Citizens v. Commonwealth of Pennsylvania (1971) stated "placement in a regular public school class is preferable to placement in a special public school class and placement in a special public school class is preferable to placement in any other type of

program of education and training" (Section 117, 1971). In Lebanks v. Spears (1973), the consent order reinforced the desirability of placement in regular classrooms, with appropriate support services, over placement in special classes removed from the mainstream of public education.

The subsequent increased awareness of the many abuses of the system, and the commitment on the part of the federal government to ensure a free and appropriate education for students with disabilities, led to passage of The Education for All Handicapped Children Act of 1975 (P.L. 94-142) (Winners All, 1992). P.L. 94-142 guaranteed that children with disabilities no longer could be denied a free, appropriate education and that, to the maximum extent appropriate, students with disabilities should be educated with children who are not disabled.

Although a major tenet of P.L. 94-142 was that "to the maximum extent appropriate, handicapped children are to be educated with children who are not handicapped" (1975), a separate bureaucracy--special education--has evolved to educate students labeled as disabled. This bureaucracy may be undermining attempts

to integrate individuals with disabilities into society and to ensure they have opportunities to lead full and satisfying lives (Winners All, 1992). In a study of twenty-six large cities, Gartner and Lipsky (1989) reported fewer than 5% of all students labeled for special education services ever left that system completely and returned to the mainstream.

Although they may not leave the special education system completely, students with disabilities often are assigned to general education classrooms for all or part of a school day. This practice of mainstreaming evolved as the way to meet the directive of P.L. 94-142--that students should be educated in the least restrictive environment (LRE). "Unfortunately, the common practice has left many students with fragmented educations and feeling that they neither belong in the general education classroom nor the special education classroom" (Winners All, 1992, p. 10). Additionally, problems of communication and collaboration among the several kinds of teachers serving a child with disabilities have mounted steadily (Rainforth, 1992; Winners All, 1992).

The current law, the Individuals with Disabilities Education Act of 1990 (IDEA), requires that all students be educated alongside typical, nondisabled peers to the greatest degree possible, and that any move away from the regular educational setting occur only when it is not possible for that student's program, as supported with services, accommodations, and aides, to provide him or her with an appropriate education (Snell & Eichner, 1989). School systems have tended to interpret this "least restrictive environment" (LRE) clause less often as an integration mandate and more often as permission to provide a continuum of placements. The restrictiveness of these placements and separation from students without disabilities increased according to a student's disability label and the system's familiarity with appropriate intervention (Lipsky & Gartner, 1989). Despite this history, the "burden of proof" rests with the school system to justify any placement other than a regular classroom for a child with a disability (Salisbury & Smith, 1991).

The latest crusade in special education (for inclusive schooling) has received vociferous

support from a number of influential groups including, but not limited to, the National Association of State Boards of Education (NASBE), The Association for Persons with Severe Handicaps (TASH), and the Council for Exceptional Children (CEC). These groups view "inclusive schooling" or "inclusion" as students with disabilities attending their home schools with their age and grade peers. Included students are not isolated in special classes or wings within a school and, to the maximum extent possible, included students receive their in-school educational services in the general education classroom with appropriate in-class support (Alper & Ryndak, 1992; Androes, 1990; Dover, 1994; Winners All, 1992).

The history of special education has taken schooling of students with disabilities from no school and institutionalization to these students receiving instruction alongside their peers without disabilities. Understanding the history of special education has significance for this study as it builds the framework for the full-integration program which is analyzed here.

Student Achievement
in an Integrated Setting

A review of related literature revealed no published studies addressing the effects of inclusion or integration on the academic performance of general education classmates. A preliminary study by Sharpe, York, and Knight (1992) was obtained from the University of Minnesota.

To investigate the impact of an inclusive school environment on the academic performance of general education students, Sharpe et al. (1992) conducted a pretest-posttest post hoc study. The researchers examined the academic performance differences, as measured by group achievement test scores and report card ratings, between 35 third and fourth grade students educated in an inclusive environment and 108 third and fourth graders who were not educated in inclusive environments. The results revealed no statistically significant differences between the two groups in any academic area.

The results of earlier studies by Bricker and Bricker (1977); Odom, DeKlyen, and Jenkins (1984); and Strain (1984) seem to have relevance to the issue of

the effect of integrating disabled students on the achievement of nondisabled classmates. These studies in preschool settings revealed that students without disabilities were not affected adversely by exposure to peers with disabilities. These researchers found that students without disabilities continue to experience expected developmental gains when integrated with peers with severe disabilities.

The 1977 Bricker and Bricker study was conducted in an early-intervention program serving 78 students ranging in age from five to 76 months. The students were in one of three groups--infant, toddler, or preschool. Developmentally "delayed" and "nondelayed" students were integrated in each group. The researchers found gains on the Stanford-Binet Scales of Intelligence made by nonhandicapped students in integrated classes to be comparable to gains made in one year by the norm group. Additionally, the researchers assessed the motor, sensorimotor, and language of the nondelayed students. This assessment indicated that these "normal" children did not develop problems as a function of associating with children who had moderate to severe learning difficulties.

To examine the effects of placing young children without disabilities in classes primarily containing students with disabilities, Odom et al. (1984) compared 16 students who were assigned to four integrated classes to 16 students who were placed in classes comprised of only students without disabilities. At the beginning and end of the academic year, a battery of assessments, including the Stanford-Binet Intelligence Scales, the Preschool Language Scale, the Uniform Performance Assessment System - Preacademic Subtest, and the California Preschool Scale of Social Competence (all chosen because of the size of the standardization population) was administered to the students. No significant differences in performance on any of these measures were found. Placement of students without disabilities in integrated special education classes where the majority of peers had disabilities did not appear to interfere with normal development.

Similarly, Wang and Baker (1986) utilized meta-analysis techniques to examine 11 empirical studies from a pool of 264 studies of mainstreaming effects over a ten-year period--from 1975 through Spring, 1984.

The sample included 541 students with a median of 40 students per study used in the meta-analysis. Thirty-nine percent of the subjects were in grades kindergarten through 6th; 16% were in middle school; and, 1% were preschoolers. In 44% of the comparisons, no information on grade levels was provided. Fifty-three percent of the comparisons were of students classified as mentally retarded; 3% were of learning disabled students; 19% were of hearing-impaired students; and, 25% were of students with mixed categories of exceptionalities. The researchers found that mainstreamed special education students consistently outperformed their segregated peers from comparable disability groups. Additionally, Wang and Baker found design features of mainstreaming programs that showed greater proportions of positive than of negative outcomes were features reported in the effective-teaching literature to be associated with programs designed to provide for student differences.

In the fall 1991 issue of Impact (Vandercook et al.), reference was made to research relevant to the effects on nondisabled students of having students with disabilities in their classes. One study described was

the Sharpe et al. (1992) research cited earlier in this review. The findings of the remaining three studies conducted by Salisbury and her colleagues, Kozleski and her colleagues, and LeRoy and her colleagues, as summarized in Impact, are reported here.

Salisbury and her colleagues in the Collaborative Education Project, a cooperative venture between the State University of New York at Binghamton and the Johnson City Central School District, studied the impact of a phased-in inclusion program in the district's two elementary schools. The project compared pre- and post-inclusion California Achievement Test (CAT) reading and math scores for students in grades one to three in the two schools, one school with students with mild to profound disabilities, the other with students with mild disabilities. Although five students with severe and profound disabilities were assigned to self-contained classes in the inclusive school, they spent a high proportion of their time in general education classrooms. Preliminary analysis of data suggested that the presence of peers with severe and profound disabilities did not inhibit the rate of

achievement in reading and math (cited in Vandercook et al., 1991).

In the second study cited in the Impact article, Kozleski and her colleagues at the University of Colorado examined the impact of the inclusion of a nine-year-old student with developmental disabilities in a third grade class. The academic progress of her classmates was compared to that of their cohorts in the school's two other third grade classrooms. Statistical analysis of the students' scores on the Comprehensive Test of Basic Skills (CTBS) revealed no differences between the academic achievement of the students in the inclusive third grade and the academic achievement of the students in the classes where no student with developmental disabilities was included fully.

In the last study cited by Vandercook et al. (1991), LeRoy and her colleagues at the Center for Inclusive Education examined the effect of the first and second year of the inclusion of students with mild to severe disabilities in general education classrooms in the Saline, Michigan Area Schools. The Gates-MacGinitie for grade 1 and the CAT for grades 5 and 6 were the standardized tests used to measure the

students' academic achievement. Results of paired comparisons of achievement test scores between students in inclusive classrooms and students in the same-grade classes not attended by students with disabilities revealed no significant differences in outcomes (cited in Vandercook et al., 1991).

The results of the research cited indicate that educating general education students in classes with students with disabilities does not impede academic progress. The outcomes of recent studies are consistent with results of earlier studies of skill acquisition of preschoolers in integrated settings.

Attitudes of Students, Parents, and Staff

Authorities assert that the successful integration of students with disabilities is thought to be influenced greatly by the attitudes of able-bodied students (Bender, 1980). There is early evidence (Voeltz, 1980a) that children without disabilities describe their interactions with their peers with severe disabilities as an experience which prepares them better to cope with a variety of individual differences. Additionally, there is copious data that

supports the tenet that students without disabilities have positive attitudes towards students with disabilities when they are exposed to them.

In her study of social/leisure interaction between students with severe disabilities and their peers without disabilities, Voeltz (1980a, 1980b) found significant increases in positive attitudes when students participated in a structured, friendship-based "special friends" program. Subsequent research by Voeltz (1982) as well as studies by Armstrong, Rosenbaum, and King (1987); Cates et al. (1990); Condon, York, Heal, and Forschneider (1986); DeBevoise (1986); and, Esposito and Reed (1986) support Voeltz's findings and provide further evidence that experiencing direct, structured contact with persons who have disabilities promotes more positive attitudes in students without disabilities. Donaldson (1980) adds that contact should be in a non-threatening environment. Further, following his review of the literature on attitude change, Donaldson contended that structured experiences are more likely to result in positive attitude change toward persons who are physically disabled.

Armstrong et al. (1987) reported that social interaction between able-bodied and disabled students improves the able-bodied students' attitudes toward their disabled peers. They concluded that "buddy-type" programs are successful interventions whereas a program in which puppets simulate persons with disabilities had no measurable impact on attitudes. These findings were based on a study of 46 buddy and 45 control children in grades 5 to 8. The primary outcome measure was the Chedoke-McMaster Attitudes Toward Children with Handicaps (CATCH) scale, a 36-item self report measure. In the CATCH survey children respond to statements about their cognitive understanding of, affective response to, and behavioral intentions toward disabled children, using response options on a five-point Likert scale. The reliability coefficient alpha is 0.9 for the CATCH survey.

Cates (1990) conducted additional research on students' attitudes toward their peers with disabilities. Cates' project involved instituting a fourth-grade partnering class in which nondisabled students who volunteered to be "partners" to their disabled peers assumed such responsibilities

as selection of reading materials, helping with lunch, assisting with art and music, participating in language-building activities, and planning activities. Measures of student attitudes before and after the project were taken. Specifically, the students in the fourth-grade class responded to a question regarding their interest in being partners. Before the project, 41% were interested; whereas, after the project, 86% expressed an interest. The students who participated wrote about their partnering experience, with their narrative responses overwhelmingly positive.

Observational research by DeBevoise (1986) was conducted in one school in Louisville, Kentucky. DeBevoise found that going to school with students with disabilities provided positive and "enriching" educational experiences for general education students.

In support of and to expand upon Voeltz's (1980a, 1980b) finding that students who associate with their peers with disabilities develop positive attitudes about persons with disabilities, Esposito and Reed (1986) administered the Primary Student Survey of Handicapped Persons (PSSHP) to 92 young children without disabilities. The PSSHP has a reliability

coefficient of .70 and an alpha coefficient of .45. Nine of the 92 subjects had participated in structured activities in an integrated preschool two years earlier. To determine if the positive attitudes of these nine students were maintained over time, the researchers computed a single factor analysis of variance. They found positive attitudes were maintained over time.

Additionally, Esposito and Reed (1986) examined the effects of structured interaction on the development of positive attitudes toward persons with handicaps. No significant difference between the structured-contact and the unstructured-contact groups was found. Similarly, no significant difference was found between the attitudes of those who had had contact two years earlier and those with present contact.

In a large-scale study of students without disabilities, Condon et al. (1986) replicated and extended Voeltz's research wherein she had found the children in schools that included students with severe disabilities were more accepting of those students than children who had never been in integrated schools

(Voeltz, 1980a, 1980b). Condon et al. administered the Acceptance Scale to 507 students without disabilities in grades 2 through 6 in two similar public schools. One of the schools included five classrooms of students with severe disabilities. Results indicated that students in the same school as students with severe disabilities had more accepting attitudes of students with disabilities than students in nonexposure groups. In addition, the results of the study suggested that enhanced attitudes toward individuals with disabilities may dissipate rapidly without sustained exposure.

In their study of middle school students' attitudes about the integration of students with severe disabilities in their classes, York, Vandercook, Macdonald, Heise-Neff, and Caughey (1989, 1992) found 89.5% of the students thought that integration was a good idea. The students' responses to the other questions generally indicated that integration was a positive experience for them and for their classmates with disabilities and that it should continue.

The results of the studies mentioned previously are in conflict with early data gathered by Gottlieb, Cohen, and Goldstein (1974) who found students'

attitudes toward disabled children were more favorable in schools where they had no exposure to children requiring special education. Others even found integration may increase prejudice, stereotyping, and rejection of disabled children (Gottlieb, 1974; Johnson, 1950).

In an early study, Johnson (1950) administered a sociometric questionnaire to students from two communities in twenty-five classes in grades 1 through 5. One or more students labeled "mentally handicapped" (MH) were in each class. Johnson found the students with disabilities were more rejected and less accepted than were the typical children in the classes studied. Additionally, Johnson's results showed the MH students to be more rejected than students labeled "borderline" (mentally handicapped). In his follow-up interviews, Johnson discovered that the students with disabilities were seldom rejected because of their low academic ability. Instead, the majority of reasons given for their rejection were unacceptable behavior and apparent inability or desire to conform to group standards of behavior.

In his investigation of 88 fourth graders, Gottlieb (1974) found that academic incompetence was an important cause of less favorable attitudes by middle-class students toward children. The attitude scores of the low-SES students in his research sample were not affected by academic performance. Gottlieb's data indicated that labels, per se, (e.g., MH) do not significantly affect the attitudes of peers.

In addition to research on student attitudes, data on adult and parent attitudes have been being gathered for several decades. In 1980, Sandler and Robinson reviewed public attitudes and community acceptance of mentally retarded persons. These researchers conducted their investigation at a time when increasing numbers of persons labeled mentally retarded were leaving institutions and moving into the community. A theme that emerged from their research was that structured contact experiences seem to have a more positive impact on attitudes towards persons with disabilities. Sandler and Robinson suggested one way to influence public attitudes toward persons with disabilities was to provide the public with information about mental retardation. They suggested a viable strategy to be to

do so via nonprint media such as film or TV. Finally, they conceded that the best way to shape public attitude is actual experience with mentally retarded people in the community.

Berryman (1989) used his "Attitudes of the Public Toward Educational Mainstreaming" (ATMS) scale to sample public attitudes on mainstreaming. The ATMS had been validated factorially for use with a general adult population; internal consistency was found to range from .82 to .90. Berryman administered the ATMS to 377 adults at a small city shopping mall. He found that parents with children in school were less favorable to mainstreaming in their children's schools than the general public. The general public generally was favorable to mainstreaming students whose handicaps were not disruptive to children's learning.

In addressing parents' attitudes, Rosenbaum et al. (1987) developed The Parental Attitudes toward Children with Handicaps (PATCH) Questionnaire. The PATCH survey, an adaptation of the CATCH survey discussed earlier in this review, was designed to sample reactions of parents of preadolescent children to a variety of everyday situations which they or their

children might encounter. PATCH is a self-administered 30-item scale. Parents respond on a Likert scale, and standardized scores range from zero to 40 with a higher score representing a more positive attitude toward children with disabilities. Coefficient alpha is 0.89, and construct validity is good. These researchers analyzed their data according to certain sociodemographic characteristics of the respondents (e.g., married/unmarried, level of education, SES level), by language of origin, and by gender (mother or father). Parents were given one of two scenarios. The researchers found that both mothers and fathers expressed more positive attitudes toward a physically disabled child than toward a retarded child. Rosenbaum et al. found that parents who knew someone who was handicapped scored significantly higher on PATCH than parents who did not know a handicapped person. These researchers also found that attitudes varied directly with the level of parents' education and with the status of their occupation; the higher the level of education and the higher the status of their occupation, the more positive the attitudes. The findings of Rosenbaum et al. suggest that opportunities

for exposure to and familiarity with disabled people can have a positive influence on attitudes although, the researchers admit, " . . . it is also probable that those with positive feelings are more likely to get to know a disabled person" (p. 332).

In their study, Chattaway and Madak (1981) used the Attitudes toward Disabled Persons (ATDP) scale and found that parents of disabled children had significantly higher attitude scores than parents of nondisabled children. This finding, along with that of Sandler and Robinson (1980), suggests that opportunities for exposure to and familiarity with disabled people can have a positive influence on attitudes toward the persons with disabilities. In related research, McDonnell (1987) found that parents whose children with severe disabilities attended special schools predicted that placement in a regular school would be a negative experience for their children. Parents of children who attended integrated programs were overwhelmingly positive about the placement of their children.

In additional research on parent attitudes toward inclusion, 15 parents, whose kindergartners or first

graders had been in inclusive classrooms during the first year of a full-inclusion program at Scandia Elementary School in St. Cloud, Minnesota, were interviewed. One common thread in their responses was that inclusion was a good experience for all children and that a child is missing something if denied the opportunity to be a member of an inclusive classroom and school community. The majority of parents interviewed reported many positive changes in their children over the school year, some of which they attributed to their children's membership in inclusive classes (Johnson & Vandercook, 1991).

Information regarding student attitudes concerning inclusion and students with disabilities is prevalent in the literature. Additionally, there is adequate information regarding parent attitudes toward these issues. Data regarding staff and teacher attitudes about full integration or inclusion are sparse; yet research has been conducted and now will be reported.

In 1990, West and Cummins reported on personal and professional change associated with the integration of three children with Down Syndrome into public school kindergarten in three Northeastern Tennessee schools.

West and Cummins utilized qualitative methods, including observations, interviews, and analysis of school-related documents, to assess the changes in the adults involved in the schools' integration programs. These authors reported that teachers experienced greater change over the course of one school year than did parents or principals. The most significant area of change was the teachers' levels of confidence in the concept of mainstreaming. The teachers progressed from feeling inadequate and fearful to feeling proud and confident. At the end of the year, the researchers summarized the teachers' attitudes toward this integration effort as positive.

Another study of teacher attitudes was conducted in two suburban midwestern communities (York et al., 1992). In their study, the researchers made comprehensive efforts to gather attitudinal data from teachers at the end of the first year that middle school students with severe disabilities were integrated into general education classes. Responses from the general and special educators generally were positive with the teachers noting positive outcomes for themselves as well as for the students with and without

disabilities. One respondent did express concern regarding liability in physical education class.

Of particular interest in the results of the York et al. study were the recommendations by the general educators. All of the general educators who responded recommended continuation of general class integration efforts although some qualified their responses by recommending integration in homerooms and selective classes. The need for ongoing communication among general and special educators was recommended and two teachers recommended starting integration efforts on a voluntary basis. Special educators also recommended the need for increased communication with and by general educators.

In a study of the experiences of general education teachers with a student with severe disabilities in their classes, Giangreco, Dennis, Cloninger, Edelman, and Schattman (1993) found that, despite the teachers' initial negative reactions to including a child with severe disabilities, 17 of the 19 teachers interviewed reported positive experiences. These general educators reported many benefits to the students with disabilities, their classmates without disabilities,

and themselves. The researchers referred to the change in these teachers as a "transformation" (p. 368).

In a study of the effects of full inclusion on general education teachers, Rainforth (1992) found the attitudes of the teachers to be generally positive. There were concerns expressed by some of the teachers regarding the appropriateness of inclusion of students who are more active and disruptive. There also was confusion regarding the definition of inclusion. Several teachers did not believe that adapting expectations, curriculum, and materials was consistent with inclusion. Rainforth viewed her findings as an "amplification or generalization of attitudes, philosophies, and practices that existed in the school prior to the start of inclusion. Thus, the nature of the school before inclusion seemed to have predisposed teachers both to consider the initiative and to ensure its success" (p. 48). Those people who were positive before inclusion were positive after the program began. Similarly, those who were negative before inclusion remained so after the program began.

The research cited on attitudes toward integration efforts is consistent with the work of Grenot-Scheyer

and Falvey (1986), who emphasized the importance of evaluating integration activities to determine if modifications and/or changes to the program are necessary and to provide a powerful data base to validate and to support integration efforts. These authors specifically suggested utilizing the following methods which relate to attitudes:

1. "Attitude surveys, which can be used to examine the attitudes of nonhandicapped students, regular and special education staff, and toward students with severe handicaps at various points in the integration process" (Stainback & Stainback, 1981; Voeltz, 1980; cited in Grenot-Scheyer & Falvey, 1986, p. 230).
2. "Interviews with staff, parents, students, community members, and other participants in integration activities, which can be used to determine understanding and acceptance of the integration activities" (Project Reach, 1983; Rosenberg, 1980; cited in Grenot-Scheyer & Falvey, 1986, p. 230).

In summary, the attitudes of students and parents toward integration appear uniformly positive.

Attitudes of teachers are mixed with concerns regarding the practice accompanying generally positive attitudes.

Social Interaction between Disabled
and Nondisabled Students

Studies addressing the nature of social interaction between students with disabilities and students without disabilities have been being conducted for nearly two decades. Research relevant to the present study is presented in this section.

Snell and Eichner (1989) note that social skills are important because they enable individuals to foster friendships and because the absence of appropriate social skills may reduce opportunities to enjoy life. "Acquisition and effective use of social skills are important to all individuals" (Wolfe & Snell, p. 5).

In an early large-scale behavioral study, Greenwood, Walker, Todd, and Hops (1976) relied on continuous recording procedures to assess the social contacts of preschool children. Results indicated a .90 correlation between initiated positive behaviors and positive behaviors emitted in response to these overtures. This observational study showed that

preschool children create their own social environment. Children's behavior patterns tend to set the occasion for that kind of social reaction by peers that validates their own approach to peers.

Behavioral studies of preschool-aged students by Strain (1977) and Strain, Shores, and Timm (1977); and of school-aged autistic students by Ragland, Kerr, and Strain (1978) confirmed that positive social initiations by normal or less-disabled children could be employed to increase the positive social behavior of withdrawn disabled classmates.

The Strain (1977) research involved three behaviorally disordered preschool boys whose IQ scores on the Stanford-Binet ranged from 47 to 55. The experimental sessions took place in a small playroom in a private treatment center. On experimental days, the three boys were brought from their classroom to the experimental setting. They were told by their accompanying teacher that this was time to play together with friends. Experimental sessions were 15 minutes each day. Generalization sessions of free play took place in the subjects' classroom. These sessions were also 15 minutes in length. The coding system used

for the observations included two general behavior categories, motor-gestural and vocal-verbal, along with the positive and negative topographic features. Twenty reliability checks were conducted across all experimental conditions and generalization sessions. Cell-by-cell reliability on all behaviors reported ranged from 81% to 96%. The major findings of the study were the intervention procedures consisting of increased social initiations by a peer confederate increased the positive social behavior of all subjects, and, for two of the three subjects, positive social responding in the treatment setting generalized to a free-play period.

In a similar study of the effects of peer social initiations on the behavior of withdrawn preschool children, Strain et al. (1977) examined the impact of intervention on the frequency of social approaches made by nondisabled peers to isolate preschoolers. As in the Strain (1977) study, Strain and his colleagues found the intervention procedure consisting of increased social initiations by a peer confederate increased the positive social behaviors of all subjects in response to these events. Additionally, they found

that the intervention procedure also increased the frequency of initiated positive social behaviors by five of the six subjects, and the intervention procedure produced differential effects in direct relation to the subjects' initial social behavior repertoire. The Strain et al. study seems to highlight the importance of recognizing and designing interventions and programs based on the individual differences in students.

The Ragland et al. study (1978) involved three low-functioning, autistic subjects and a 10-year-old peer trainer. On experimental days, these four students were taken to their experimental setting by the investigator. The three target children were told to play as they wished. As the students were observed, for six consecutive minutes, their social behaviors were recorded in a continuous fashion. All social behaviors were coded as to who emitted the behavior, whether the behavior was motor-gestural or vocal-verbal, whether the behavior was positive or negative in type, and whether the behavior was considered as initiated or responded. Twelve reliability checks were conducted across all experimental conditions.

Interrater agreement ranged from 76% to 100%, with a mean of 88%. The major findings were that the intervention procedure, consisting of increased social initiations by an age peer, increased the positive social behavior of all subjects, and the subjects showed no evidence of increased positive social behavior when other children were under intervention conditions and they were not. The results of the Ragland et al. research extend the research of Strain (1977) and Strain et al. (1977) on the utilization of age peers to affect social behavior change. The implication is that, with careful instruction, students who are less disabled or without disabilities may be employed to increase the social repertoire of their withdrawn peers.

Haring and Lovinger (1989) conducted research similar to that of Strain (1977), Strain et al. (1977), and Ragland et al. (1988) in the preschool setting as well as in the kindergarten setting. Haring and Lovinger added to the accumulated data by reporting that when students with severe disabilities were taught to initiate interactions and play appropriately, their level of initiations increased, as did the level of

responsivity by peers toward their initiations. Additional preschool research by Strain (1983), Falvey (1981), Baumgart (1982), and Anderson (1983) supports the tenet that students with severe disabilities and their peers without disabilities have been shown to interact with each other frequently, productively, and effectively when provided the opportunity.

Falvey (1981) compared the academic and social competence of students with disabilities in an integrated kindergarten classroom to the academic and social competence of a matched set of students with disabilities who were assigned to a traditional self-contained classroom. She found that the students with disabilities assigned to the integrated group made gains between the pre- and the posttest on the Boehm Test of Basic Concepts, the two groups of students with disabilities made equal gains on the Madison Metropolitan School District Screening and the Kindergarten Survival Skills Checklist, and the students with disabilities assigned to the totally integrated group displayed significantly more appropriate behavior than the students assigned to the traditional setting. Falvey concluded that these

findings strongly support the development of totally integrated programs for students with disabilities and students without disabilities.

Baumgart (1982) investigated the activities and interactions engaged in by severely disabled students with nondisabled students and other disabled students during recess period. Baumgart observed six students at each of two schools. Data were collected on these 12 students on the initiators and responders of each interaction between students with severe disabilities and students without severe disabilities, the activity that was ongoing during the interactions, and the appropriateness or inappropriateness of the activities. Nonparametric statistical analysis, descriptive data, and evaluations of the classroom teachers were used to analyze the data. The results indicate that appropriate activities were prevalent between students with disabilities and students without disabilities and students with disabilities were not subject to ridicule or harassment.

Anderson (1983) examined the interaction patterns of children with autism and their families in the natural home environment. This researcher found the

occurrence/nonoccurrence of interaction was affected by the proximity of persons present and by the level of ritualistic/stereotypic behavior exhibited by the autistic children. Anderson found that the autistic children rarely initiated interactions but they did respond to interactions initiated by other family members. She found that conversations initiated by the autistic children were just as likely to be continued beyond the initial initiation and response as were those initiated by other family members. Anderson felt that her work had implications for the education of children with autism in the areas of assessment within the natural environment, educational programming in the areas of social interaction and communication, instructional technology utilized to teach new or decrease undesirable behavior, and family involvement in the educational process.

To examine the nature of social interactions in segregated versus integrated settings, Anderson and Goetz (1983) conducted a direct observational study of "vertical" (nondisabled peer/severely disabled student) interactions during recess, in both segregated and integrated settings. The number and type of

interactions experienced by severely disabled students were measured using the Educational Assessment of Social Interaction (EASI). Anderson and Goetz found that there are differences in the opportunities for and the nature of social interactions experienced by students with severe disabilities in integrated settings. There were significantly more opportunities for interaction between severely disabled and nondisabled persons in the integrated setting. There were more than twice as many initiations by nondisabled persons toward the students labeled severely disabled in the integrated setting. The data further revealed qualitative differences in the nature of the increased opportunities for social interaction. In the segregated setting, 100% of the interactions were between a nondisabled adult and a severely disabled student (vertical). Only 11% of the interactions in the integrated setting were vertical; 89% of the social initiations directed toward the students with severe disabilities were generated by peers without disabilities.

Brinker (1985) observed 245 students of all ages in integrated and segregated social groups. The

students were observed over eight 10-minute observation periods throughout the school year. Brinker found the rate of social bids directed by students with disabilities to other students to be greater in the integrated setting. In the integrated setting, higher rates of positive bids were directed by nondisabled students to students with severe disabilities than were bids by other students with disabilities.

Additionally, Brinker's data indicated that students without disabilities responded to social bids from students with severe disabilities more frequently than did other students with disabilities. Brinker concluded that nondisabled same-age peers are the key to successful integration efforts.

In later research, Brinker and Thorpe (1986) investigated the relationship between various features of integration as predictors of the social output of students with severe retardation to nondisabled peers. The researchers found that 32% of the variance in degree of integration was associated uniquely with the social behavior that other students directed toward the student who was severely retarded. Brinker and Thorpe concluded that nondisabled peers were the key to

successful integration. They further suggested that direct intervention with nondisabled peers appeared to be the best manner to ensure that integration occurs.

The research cited, on social interaction, does not emphasize training nondisabled peers to achieve positive outcomes. However, there is research which stresses the significance of peer training. For example, Peck, Apolloni, Cooke, and Raver (1978) investigated two peer-imitation procedures used to increase the imitation between retarded and nonretarded preschoolers. Baseline observations revealed low rates of imitation and social interaction between retarded and nonretarded classmates under naturalistic conditions. A simple training procedure, consisting of adult-delivered prompts and social reinforcement, was employed to increase the retarded children's imitation of their nonretarded classmates free-play behavior. Demonstrations of training effects were made utilizing both multi-element baseline and multiple baseline designs. Data collection under nontraining conditions indicated maintenance of peer-imitation effects. Increases in reciprocal social interaction between

retarded and nonretarded children were noted under training and nontraining conditions.

Brady, Shores, Gunter, McEvoy, Fox, and White (1984) examined the effects of training a 15-year-old boy with autism to initiate to eight nondisabled sixth graders, ages 11 to 13, who were introduced, sequentially, to training. Using a multiple baseline design across nondisabled training peers, the subjects' rates of social initiations and the percentage of time spent in continuous, spontaneous interactions with both training and nontraining peers were examined. Results indicated that spontaneous initiations to and interactions with nondisabled peers increased with the introduction of a second training peer. Results also indicated that across-peer generalization was more evident after training with the third peer and continued even after cessation of the training tactics. These findings reveal that training nondisabled peers is an effective way of promoting generalization of social behavior. Brady et al. report their "results strongly suggest that prompting and praising social initiations across sequential multiple nondisabled peer exemplars can be a powerful training tactic for

enhancing the social repertoire of children with autism and severe disabilities" (p. 285).

Research by Strain (1984), which replicated and expanded upon his earlier research, investigated the social interactions of six preschool boys who were enrolled in a class that served 12 students with severe disabilities. The study was designed to test the notion that a developmentally integrated setting would yield superior generalized behavior change than would a developmentally segregated setting. Observations took place in four settings: developmentally segregated (the six target boys were observed during a six-minute play period with their six classmates), new developmentally segregated (the six boys were observed during a six-minute play period with six students with similar disabilities who were enrolled in a separate specialized class), new developmentally integrated (the six boys were observed during a six-minute play period with six normally developing kindergarten boys), and new developmentally integrated with trained peers (the six boys were observed during a six-minute play period with six different normally developing kindergarten boys who had been instructed by their teacher to try

their best to get the new children to play with them).

The results of Strain's (1984) research were as follows:

1. Developmentally integrated settings are more clearly associated with greater social participation (both prior to and following skill training for severely handicapped young children) than developmentally segregated settings.
2. The lack of social participation in segregated settings is not attributable to interaction history, as evidenced in the similar levels of social interaction by target subjects with familiar and unfamiliar handicapped peers.
3. The social-initiation intervention produced large and consistent differences in all subjects' levels of social participation in the treatment settings.
4. The minimal training offered to peers in order to support generalized behavior change increased subjects level of social participation to a level approximating that of normally developing children. (p. 205)

Although these results support the integration of students without disabilities and students with disabilities, Strain added a note of caution. He stated that only when integrated students were requested to engage the students with disabilities in interaction did the level of generalized behavior change approach the level of social participation characteristic of students without disabilities.

Additional research on peer involvement includes a study to train a set of observationally determined social behaviors via peer initiation, to determine if effects generalized across classroom settings, to intervene directly if generalization did not occur, and to analyze components of the peer-initiation intervention (Odom, Hoyson, Jamieson, & Strain, 1985). After baseline data were gathered, nondisabled preschool students (confederates) were taught to direct social initiations to three preschool-aged students with disabilities. When necessary, teachers prompted the confederates to engage the students with disabilities in social interaction. The confederates were rewarded with tokens. The confederates' initiations resulted in increased frequencies of

positive social interaction. The confederates initiations continued when tokens were withdrawn but decreased when the teachers reduced their prompts. The authors concluded their report by suggesting that, if the purpose of peer-initiation interventions is to promote independent social interactions between confederates and students with disabilities, procedures must be developed to reduce teacher prompts systematically. Odom et al. noted, though, that some minimal form of teacher prompting may be required as school-aged children do not have adequate social repertoires for independently generating a variety of successful social initiations when interacting with a peer who is consistently unresponsive.

Additional research on the prompting role of the teacher was conducted by Odom and Strain (1986). These researchers compared two procedures for improving the social interactions of three autistic boys. In a peer-initiation condition, peers (confederates) were taught to initiate interaction with the autistic students. In a teacher-antecedent (prompting) condition, teachers prompted the autistic students to initiate with confederates who had been taught to reciprocate. Using

an alternating treatment design, differential effects were found. The peer-initiation procedure reliably increased the social responses of the autistic students. The teacher-antecedent condition increased the initiations and responses of the autistic students. In addition, the researchers found longer chains of social interaction occurred during the teacher-antecedent condition.

Although the studies reviewed have involved very young students, there have been several investigations involving older students. Kohl, Moses, and Stettner-Eaton (1983) examined whether systematic training enables fifth and sixth graders to become instructional trainers of students with severe disabilities. The training program focused on teaching cafeteria skills to a group of students with severe disabilities. The training program consisted of three components: formal information sessions; in vivo instruction (reinforcement reminders, instruction monitoring, contingent reinforcement, and data monitoring); and feedback sessions. An ABAB reversal design was used to evaluate the effectiveness of the systematic training components. Results revealed that students without

disabilities can become instructional trainers with students with severe disabilities as long as systematic training is provided.

Additional research involving older students was conducted by Chin-Perez et al. (1986). They studied a secondary program for students with severe disabilities in which attempts were made to maximize the social contact between students with severe disabilities and students without disabilities by selectively integrating the students with disabilities into academic and other general education courses. Students without disabilities were used for tutoring and to assist in gathering data (research assistants). The researchers administered a 10-question survey. Responses to half of the questions were on a Likert scale; the other answers were written in response to open-ended questions. The survey was returned by 85% of the participants including peer tutors, parents, general education teachers, research assistants, administrators, and special education teachers. One hundred eighty of the 184 written responses regarding changes in the students with disabilities were positive. The respondents reported that social skills

were the area of greatest improvement with all areas rated being at the upper end of the Likert scale. Thus, these survey findings suggest the positive impact of this integration program on the behavioral repertoires of students with severe disabilities.

Another study involving older students was reported by Staub and Hunt (1993), who corroborated the results of previous research and confirmed the effectiveness of training peers to improve the social skills of students with severe disabilities. That is, Staub and Hunt evaluated the effects of social interaction training on the social interaction directed by high school students without disabilities toward peers with severe disabilities. Eight high school students who served as peer tutors in a classroom for students with severe disabilities were matched in pairs and then randomly assigned as partners for four classmates with severe disabilities. One partner in each peer tutor pair received social interaction training. A nonparametric statistical analysis of observational data revealed that the social interaction training significantly increased the frequency of initiations of interactions directed from the students

without disabilities toward their partners with severe disabilities. There also was an increase in the proportion of interactions that were social in nature, with a resulting decrease in the frequency of task-related interactions, as well as a significant increase in targeted social behaviors of the participants with severe disabilities.

One study (Sasso & Rude, 1987) provided information on the status of peers trainers. As a result of their study on the effects of training high-status peers to interact with students with severe disabilities, Sasso and Rude added that the status (high or low) of the nondisabled peer initiator affected the social response level of the students with severe disabilities. The researchers found the response level of the students with severe disabilities to be greater when responding to high-status nondisabled peers.

The bulk of accumulated research on social interactions between peers with and peers without disabilities does not include students with severe disabilities. Yet, research addressing students with other disabilities does seem to have relevance. For

example, studies of the effect of placing students with mild disabilities in regular classes by Bryan (1974), Asher and Taylor (1981), and Gresham (1982) reveal negative outcomes. These researchers indicate that mainstreamed students with mild disabilities tend to be more socially isolated and less socially accepted than their peers without disabilities. This data has implications for integrating students with severe disabilities. Voeltz (1984) suggests that such negative outcomes associated with the physical integration of children with disabilities simply indicate a need for intervention. For example, Voeltz recommends giving students without disabilities opportunities to interact with students with disabilities rather than teaching these students without disabilities about cerebral palsy, for example, or how they should be nice to students with disabilities. Additionally, Voeltz recommends expanding the general education curriculum to include reference to persons with disabilities.

In order to be valuable, data such as that which has been cited must be objective and comprehensive. To evaluate integration programs, Falvey (1981) and Strain

(1983) suggested that videotaping of integration activities between students with severe handicaps and their nonhandicapped peers is a method which provides a detailed and critical view over time.

The studies reviewed in this section spanned nearly two decades and addressed social interaction between students with disabilities and students without disabilities. Although there are countless other studies addressing the issue, the ones cited seemed sufficient to emphasize the nature of these interactions between students with and without disabilities. The majority of the data is positive, although some of the researchers do express caution in interpreting their results. A major emphasis of this review has been on the training of nondisabled peers to work with disabled students. The practice of training spans preschool through high school and, in the cases cited, seemed to be successful. Much of the research described here has relevance to the following section on adaptive behavior changes in an integrated setting as social skills, together with communication and daily living skills, are adaptive behaviors.

Adaptive Behavior Changes
in an Integrated Setting

"Adaptive behavior" refers to areas of skill acquisition by severely disabled students. These areas include socialization, communication, and daily living. Research now suggests that reciprocal horizontal (peer-to-peer) interactions available in integrated versus segregated settings enhance skill acquisition and generalization (Sailor et al., 1989). For example, studies have shown that communication skills (Goldstein & Wickstrom, 1986; Hunt, Alwell, & Goetz, 1988), play skills (Murata, 1984), and social skills (Lord & Hopkins, 1986) can be generated and maintained when taught within the framework of horizontal relationships.

Goldstein and Wickstrom (1986) evaluated the effects of peer-mediated intervention on communicative interaction among disabled and nondisabled preschoolers. Two nondisabled students were taught strategies thought to facilitate interaction and were prompted to use these strategies during free play with three language-delayed classmates. Throughout the study, triads comprised of the two peers plus a target

student were observed in their classroom during a structured free-play period. Data were collected through live observations and supplemented by audiotape recordings. Reliability of the data collection was established with a second observer independently coding 82 of 214 free-play sessions. Interobserver agreement ranged from a mean of 79% on coded child behavior to a mean of 91% on the general teacher intervention category. The intervention resulted in higher rates of interaction for each of the students with disabilities. This interaction persisted above baseline levels even after teacher prompting was withdrawn.

In a second study of communication skills of disabled students in an integrated setting, Hunt, Alwell, and Goetz (1988) hypothesized that disabled students' inappropriate behaviors can serve a variety of communicative functions and may be reduced as socially acceptable, functionally equivalent communication responses are acquired. In the Hunt et al. study, three high school students with severe disabilities were taught to initiate a conversation independently and to participate in taking turns in a conversation throughout a 10-minute session across a

variety of school and community settings with at least four nondisabled peers as partners. Observers recorded the frequency of conversation turntaking, conversation initiations, and inappropriate behaviors. The mean percentage of interrater agreement for the number of conversation turns across the three students with disabilities was 91%; for initiations across the three students, 100%; and, for the frequency or duration of inappropriate behaviors, 95%. Inappropriate social interaction behaviors that were present at high rates during baseline sessions were observed to decrease as conversation skills were acquired.

Research by Lord and Hopkins (1986) extends the work on social interaction between disabled and nondisabled students cited in the previous section. These authors observed six 8 to 12-year-old autistic students' interactions with nondisabled and autistic peers. Three subjects played in dyads with younger, normally developing kindergarten students for ten 15-minute sessions spaced over three weeks and then with nondisabled peers matched on chronological age for ten 15-minute sessions spaced over three weeks. The other three subjects experienced these play conditions in

reverse order. After intervention, all subjects showed gains in proximity, orientation, and responsiveness when playing with peers without disabilities and with autistic classmates. Same-age nondisabled playmates initiated more frequently than did younger nondisabled playmates and the same-age playmates were better able to modify their initiations in ways that increased the likelihood of a response from the autistic students. As in the studies cited earlier in this review, these findings provide support for students with disabilities having opportunities to interact with students who are not disabled. In this study, this opportunity to interact with students who do not have disabilities resulted in increased communication by students with autism. Further, the outcomes of this research provide support for interactions being with same-age peers. Based on these results, Lord and Hopkins (1986) contended that effective interactions can take place without the nondisabled students having special training.

In 1987, Meyer, an advocate for integration, gave six reasons to integrate students with disabilities in general education environments. One reason she noted

was, "Integration is necessary for curricular reasons" (p. 4). Meyer contends that students with disabilities in segregated settings are missing out on a variety of opportunities to learn and to practice what they are learning through daily interactions with their nondisabled peers. She cites the following as examples:

It is difficult to imagine how a child would actually learn to talk if all language opportunities were restricted to "language therapy" with a teacher and speech therapist. Children's games provide many opportunities to practice motor skills, language skills, dressing and undressing to go outside to play, swim, and so forth.

Not only do peer interactions give children comfortable and fun opportunities to practice skills, there are some skills that can only be learned in the context of these interactions. How can a teacher or parent really teach play and social behaviors and skills? Nonhandicapped children do not learn these things in fourth grade from their teachers, and there is a great deal of

evidence that it is the peer group which teaches rules and behavior. Knowing how to appropriately interact with other people and knowing how to "play" are essential adaptation skills. Our children need the opportunity to develop these skills. (p. 5)

In a recent two-year study of social integration of students with severe disabilities, Cole and Meyer (1991) found that integrated students progressed on a measure of social competence. They also discovered that segregated students regressed.

Cole, Mills, Dale, and Jenkins (1991) cite that research which examines the educational and developmental effects of integration generally has found little or no difference between integrated students and segregated students on language (communication), social, and general developmental measures. Yet, these researchers are critical of the methodology of this research contending that the studies were designed to evaluate group differences and not to examine the relationship of children's pretest functioning and the effect of classroom integration. Cole et al. proceeded to conduct research which

examined the effects of integration on individual preschool students with mild to moderate disabilities. Results of this research presented evidence that higher performing students gained more from integrated classes; lower performing students gained more from segregated classes. Based upon these findings, Cole et al. suggest careful monitoring of lower functioning students who are in integrated classes.

In a study providing strong support for full integration (Giangreco et al., 1993), teachers who were interviewed cited skill acquisition as a benefit for fully-integrated students with disabilities. Specifically, the teachers reported that these integrated students "learned a variety of communication, social, motor, academic, and other skills to assist in participation in home, school, and community" (p. 368).

Similarly, in a three-year study by Kozleski and Jackson (1993), the classroom teachers, special education staff, and the parents of a female student with severe disabilities who had been integrated fully in general education classes, reported a number of positive changes in the adaptive skills of that

student. The respondents attributed these changes to the integrated setting. Some of the skill gains reported were increases in the disabled student's ability to imitate her peers; in the duration of time in which she would persist in making her needs known; in her awareness of safety issues; and in independent living skills such as food preparation, hygiene, and shopping. Additionally, special education staff reported the student to have made skill gains including language development, initiating communication, articulation, problem solving, tolerance to transitions and increased self-management. The staff noted that, by the third year of the program, the student's self-stimulatory behaviors decreased.

In other literature that supports the integration of students with disabilities in general education environments, Buysse and Bailey (1993) reviewed twenty-two studies which compared outcomes for young children with various disabilities in integrated and segregated settings. Their analysis suggested potential benefits of integration, especially with respect to social and other behavioral outcomes. They concluded that "integration per se or mere exposure to typically

developing children in integrated settings may be socially beneficial for some preschoolers with disabilities" (p. 457). These researchers did add that social integration may require "active programming for children with moderate to severe disabilities" (p. 457). The conclusions drawn by Buysse and Bailey are consistent with the findings of the research cited in this review.

As evidenced in this and the preceding section of this chapter, documentation is available which relates to the enhancement of social skills in an integrated versus segregated setting. Additional information has been presented in this section on the acquisition of communication skills in integrated settings. Scant data were available on the acquisition of daily living skills, although the Kozleski and Jackson study (1993) is quite informative--albeit limited in scope, with only one subject.

IEP Skill Acquisition in an Integrated Setting

IEPs provide a record of disabled students' skill acquisition. Skills are noted as introduced,

progressing, or mastered. The proportion of IEP objectives mastered is an indication of a student's progress. Although no studies were found which assess the proportion of IEP objectives mastered by severely disabled students in integrated versus self-contained environments, research which is related to this area has been conducted.

In related research, Brinker and Thorpe (1983, 1984) investigated the educational impact of the integration of students with severe handicaps in regular schools. They found the degree of integration, as measured by interaction with students without handicaps, to be a significant predictor of educational progress, regardless of the students' functional level, as measured by the proportion of IEP objectives achieved. Based on their findings, Brinker and Thorpe report that integration is an important aspect of curricula for students with severe disabilities.

Wang and Baker (1986) confirmed that there are increases in the proportion of IEP objectives mastered by mainstreamed special education students. They utilized meta-analysis techniques to select and to examine 11 empirical studies from a total pool of 264

studies of mainstreaming effects. Wang and Baker found that mainstreamed special education students consistently outperformed their segregated peers from comparable disability classification groups.

In a study which addressed the quality of IEPs for students with severe disabilities, Hunt, Goetz, and Anderson (1986) examined the IEPs written for students who attended integrated and segregated sites. The IEPs were evaluated on the basis of seven components considered in the field of special education to be indicative of "best practices." Hunt et al. found a significant difference between the integrated and segregated groups on overall quality of IEP objectives, with higher scores for students in integrated sites. The results of the Hunt et al. study demonstrated a relationship between program placement alone and the quality of IEP objectives for students with severe disabilities.

Several other studies have addressed IEPs. In his research, Ammer (1984) asked educators to respond to questions about their roles and responsibilities in the IEP process. Based on the results, Ammer suggested that general education teachers be given a more active

role in the team decision-making process and in future in-service courses designed to improve the implementation of mainstreaming. As evidenced by such programs as The Virginia Statewide Systems Change Project and the Vermont Statewide Systems Support Project (1991), involvement of general educators has increased substantially when making decisions about included students. These systems change programs emphasize team decision making, with teams consisting of all those who have a role in educating an included student.

In additional research on IEPs, Dahl (1986) reviewed the educational services offered in Canada to students with severe to profound handicaps. As in the systems change projects, Dahl's research supports the transdisciplinary team concept and stresses the importance of administrators' becoming familiar with needs of these students. Additionally, Dahl suggested that each student's IEP should take into account the student's life circumstances and the wishes of parents or guardians.

Additional research on IEPs continues to stress the need for well-developed IEPs (Gent & Mulhauser,

1988). Also, there is research that stresses the development of IEPs which include goals and objectives related to integration in general education classes (Berrigan, 1987; Brown et al., 1983; Halvorsen & Sailor, 1990; Sailor et al., 1989; York, Vandercook, Macdonald, & Wolff, 1989).

As has been reported, research on IEPs has addressed the proportion of objectives mastered by integrated and mainstreamed students. The results of research on the proportion of IEP objectives, as well of research on the quality of IEP objectives written for integrated students, has been positive. Researchers have stressed the need for IEPs to be well-developed and to include objectives related to integration. Additionally, some researchers have stressed importance of general educators' being involved in the process of developing the IEPs of integrated students.

Time Commitments of Teachers in Integrated Classrooms

Teachers have a vital role in the integration process. A better understanding of how the teachers in

integrated classrooms spend their time will be useful in planning for the successful integration of students with disabilities. Studies which address how teachers' spend their time are scarce.

Although studies which analyze how teachers spend their time are rare, the idea that integration puts additional demands on the classroom teacher is prevalent. In their review of the literature, Jenkins and Pious (1991), extrapolated teacher tasks. These researchers deduced that the tasks which must be assumed by teachers in classrooms with mainstreamed students are "Herculean" and that, " . . . it is unreasonable to expect all teachers to assume them" (p. 563).

Research which addresses how certain teachers spend their time was conducted by Raver, Gable, Tonelson, Hendrickson, and Korinek (1992). Raver et al. analyzed the time/task demands of teachers of preschool handicapped students. The purpose of their research was to gather data on the relationship between "best practices" and what actually occurs in preschool classrooms which serve students with disabilities. Their findings would provide useful information to be

used in teacher-preparation programs. To gather data, the researchers used a two-part survey questionnaire which they had developed based on a literature review, their own experience, and field review by preschool teachers. Raver et al. found preschool teachers of students with disabilities spent 22.5% of their time on direct instructional activities, 13.2% on preparation, 15% on behavior management, 16.4% on conferencing and consulting, 9.7% on paperwork, and 2.4% on assessment/evaluation.

The instrument developed by Raver et al. was based, in part, on the work of Sargent (1981); Zabel, Peterson, and Smith (1988); and Gable, Henrickson, Young and Shokoohi-Yekta (1992). Sargent's (1981) research was designed to investigate resource teacher time utilization. He employed a time-sampling technique and compared its results with teacher estimates of their own time use. The variables the researcher examined included direct instruction, consulting with staff, consulting with parents, conducting inservice, preparation for instruction, staffings, assessment and evaluation, work with IEPs, record keeping, and general school duties. To

establish reliability of the observations, teachers recorded their own activities on data recording sheets at five random times during sessions when the observer was recording data. A 97% rate of agreement was obtained. Sargent found that teachers spent less time than they estimated for direct instruction, participating in staffings, and working with IEPs. The teachers spent more time than estimated on preparing for instruction and general school duties. No differences in the distribution of time use were found for resource teachers serving larger and smaller numbers of students.

To evaluate the operation of the least restrictive environment mandate, Zabel et al. (1988) used teachers' self-reporting to examine the use of time by resource teachers and self-contained classroom teachers of behaviorally disordered students. One hundred forty-seven self-contained teachers and 86 resource teachers served as the sample. The teachers were asked how much time they spent in teaching, planning and preparation, evaluating, consulting (and indirect services), and in other activities. These researchers found no significant differences between how resource teachers

and how self-contained classroom teachers spent their time. Zabel et al. interpreted the reasons for the absence of differences between the two delivery models as inadequate preparation of the teachers to serve in different roles, administrative barriers, and the preferred teaching roles of teachers of students with behavioral disorders.

Another source of information for Raver et al. was the Gable et al. research noted earlier in this section. Gable et al. conducted a survey to identify and compare the perceptions of 111 teachers of students with emotional and/or behavioral disorders and those of 25 special teacher educators. These respondents estimated the number of hours teachers spend weekly executing various responsibilities/competencies. They rated the importance of these competencies to teacher effectiveness, and then judged the adequacy with which teacher preparation programs are equipping teachers to carry out these responsibilities. The competency areas assessed included assessment, planning, instruction, behavior management, consulting, and administrative skills. The results revealed a general consistency between teachers and teacher educators. The largest

discrepancy in the estimation of time spent was in the category of behavior management. Teacher trainers estimated that teachers average 10 hours per week in applying behavior management strategies. Teachers reported 6.8 hours per week applying behavior management strategies.

The preceding studies were cited as they provided exemplary lists of behaviors of teachers. They included data on teachers of special education. The research described in the following paragraph cites data gathered from general education teachers in inclusive classrooms.

On her questionnaire on inclusion, Rainforth (1992) asked eight general educators who had included students with severe disabilities in their classes to respond to three questions related to time. The teachers were to indicate "never (N)," "previously (P)," or "currently (C)" in response to the following: "Having students with severe disabilities in my class, I have experienced ongoing stress from . . ." (p. 53). The teachers' responses were as follows:

- . additional time required for planning -
N (2); P (4); C (2)

- . time to individualize/adapt during the day -
N (1); P (2); C (2)
- . student interruptions that disrupt the class -
N (1); P (3); C (3) (p. 53)

This data shows that one-fourth of the respondents felt they were currently experiencing stress by spending additional time planning. A greater proportion, two-fifths, experienced stress over the time spent individualizing and adapting during the day. The greatest proportion, three-sevenths, experienced stress over disruptions.

Albeit a limited sample, the Rainforth (1992) study demonstrates the concerns expressed by teachers in inclusive classrooms. The other research cited in this section noted specific activities of teachers and, in one study, how teachers and teacher educators perceive that teachers spend their time.

Summary of Literature Review

Jenkins and Pious (1991) state that, "working on integrated placements without primary attention to child outcomes becomes a hollow exercise" (p. 564). This comment is consistent with a recent issue of

Outcomes which states, " . . . it matters little what we do if we don't know the results of our efforts. Education needs to be held accountable for its effects on students and the evidence shows positive student outcomes are wanted" (Why outcomes?, 1992).

The emphasis in the present study is on outcomes; the majority, student outcomes. This researcher realized the importance of staff and parent outcomes and sought feedback from them as well.

This literature review has provided an overview of the literature which relates to each area of the present study. Every effort was made to be equitable by citing research which supports the hypotheses of the study as well as that which does not support these hypotheses.

The brief history of special education described the significant events that led to full integration, the focus of this research. Next, literature on the effects of the integration of students with disabilities in general education classrooms on the academic achievement of classmates suggested there are no adverse effects to this practice.

The majority of the data on attitudes of those who have been involved in integration programs was positive, especially that which relates to students and parents. The attitudes of students and parents seem to be more accepting as they are exposed to and as they become more familiar with persons with disabilities. Information from teachers included suggestions regarding future integration plans. Teachers seemed most interested in improved communication between general and special educators.

The social benefits that accrue from integration are mentioned throughout the literature. The role of students without disabilities appears to be significant in the acquisition of social skills by students with disabilities. Finally, there is strong evidence to support the need for training of classmates without disabilities.

Skill acquisition seems to be increased markedly by students with disabilities when these students interact with their peers who do not have disabilities. However, some researchers expressed caution regarding the benefits of integration to low-functioning students.

The literature on IEPs stresses the need for IEPs' being well developed with goals and objectives related to being included in general education classes. There was evidence that integrated special education students consistently outperform their segregated peers. No studies were found which compared the proportion of IEP objectives of fully-integrated students labeled severely disabled to students with the same label in segregated classes.

There was scant research available on the specific demands on teachers' time in integrated classes. However, there is evidence that teachers' time commitment is a factor to be considered in inclusive classrooms. Additionally, there was some information on the various activities in which teachers are involved in inclusive classrooms.

This literature review has provided evidence regarding integration and inclusion programs. However, since there exist no comprehensive studies which compare full-integration-of-students-with-severe-disabilities programs to programs with students with severe disabilities not included, this formative

analysis aims at providing a necessary addition to the existing body of research.

Chapter 3

Methods and Procedures

Chapters 1 and 2 provided an introduction to this formative analysis of a full-integration project and a review of the related literature. The literature review revealed no comprehensive studies of full-integration projects. The present research was conducted to fill the void in the data available on the impact that the full integration of students with severe and profound disabilities (SPD) in general education classes may have on all of the participants. Additionally, the data gathered for this research were used to plan the school's full-integration program for the following year.

This research was conducted in a large urban elementary school with a student population of over 600 students in grades kindergarten through fifth. Since the fall of 1988, this school had served most of the school district's SPD students. During the 1991-1992 school year, the principal and a group of interested teachers studied the concept of inclusion/integration. During the summer of 1992, several teachers proposed fully integrating SPD students in general education

classes during the coming school year. Throughout the 1992-1993 school year, six SPD students were integrated fully in age-appropriate general education classes; two in first grade classes, one in second grade, one in third grade, and two in fourth grade.

Chapter 3 will present the methods and procedures of this research. For the purpose of presentation, the chapter has been divided into seven sections. Each section describes one of the seven areas of this analysis: student achievement; fourth-grade students' attitudes, as measured by the CATCH survey; parent, staff, and student attitudes, as investigated through qualitative methodology; social interaction; adaptive behavior; IEP objectives; and teachers' time-task demands.

Student Achievement

Hypothesis 1

There will be no difference in the math or reading achievement, as measured by the Iowa Tests of Basic Skills (ITBS), of first, second, third, and fourth graders in classes where a student labeled severely and profoundly disabled (SPD) is integrated fully and in

first, second, third, and fourth grade classes where an SPD student is not integrated fully.

Subjects

Twelve general education classes were used to test this hypothesis. Six classes had a fully-integrated SPD student and six did not. Four of the classes were first grades, two with a fully-integrated SPD student (experimental), two without an SPD student (control). Two of the classes were second grades, one with a fully-integrated SPD student (experimental), one without an SPD student (control). Two of the classes were third grades, one with a fully-integrated SPD student (experimental), one without an SPD student (control). Four of the classes were fourth grades, two with a fully-integrated SPD student (experimental), two without an SPD student (control).

The membership of each class was determined by the administration and teachers from the previous grade level, in June, 1992, prior to the decision to proceed with the full-integration program. Students were selected randomly with consideration given to balancing the numbers of students by gender and ethnicity.

Research Instrumentation

The Iowa Tests of Basic Skills (ITBS) were used to test math and reading achievement. Internal consistency reliability coefficients of the ITBS range from .71 to .92. As depicted in Table 1, grade-appropriate levels of the math and reading subtests were administered to each class.

Table 1

Levels and Forms of ITBS Used to Analyze the Achievement of General Education Students

Grade	Pretest		Posttest	
	Level	Form	Level	Form
1	6	G	6	J
2	7	G	8	H
3	9	H	9	H
4	10	H	10	G

Procedures

The ITBS subtests of math and reading were administered to the six experimental and six control classes during the third week of the 1992-1993 school year, September 24 and 25, 1992. The posttests were given six months later, during the third week of March, 1993.

The classroom teachers administered the tests following the standardized procedures furnished in the teachers' guides provided by Riverside Publishing. The tests were handscored by the researcher.

Treatment of the Data

Student achievement data in math and reading were analyzed by analysis of covariance (ANCOVA) with the pretest scores being used as the covariate. The significance level was established at .05.

Fourth-Grade Students' Attitudes

Hypothesis 2

The attitudes toward students with disabilities of fourth graders with a student labeled SPD fully integrated in their class will be more positive than

the attitudes of fourth graders in a class where an SPD student is not integrated fully.

Subjects

Four fourth-grade classes were used to test the hypothesis. Each of two classes had a fully-integrated SPD student (experimental group), and two classes did not include fully-integrated SPD students (control group). There was a total of approximately 50 students in each group. In September, the students in the four classes ranged in age from eight to ten.

Research Instrumentation

The Chedoke-McMaster Attitudes Towards Children with Handicaps (CATCH) scale (see Appendix B for the CATCH survey) was used to test this hypothesis. In the CATCH survey, children respond to statements about their cognitive understanding of, affective responses to, and behavioral intentions toward disabled children using response options on a five-point Likert scale (Armstrong et al., 1987). For example, one question on the scale read, "I would be happy to have a handicapped child for a special friend."

The test-retest reliability of the CATCH survey was acceptable with a reliability coefficient of .73.

The alpha coefficient for total CATCH is .90.

Reliability was determined using a convenience sample of 64 students in grades five through eight (Rosenbaum, Armstrong, & King, 1986b).

Procedures

As a premeasure, the CATCH survey was administered to the four fourth-grade classes on the first day of school, September 8, 1992. The post-CATCH was administered during the last week of school, June 14, through June 17, 1993. The fourth-grade classroom teachers administered the survey. Each teacher told the children to answer each item as they understood it. No specific explanation of any statement was given.

Treatment of the Data

The data collected relative to the students' attitudes toward children with disabilities were used to assess the effect of being in a class with a fully-integrated SPD student. The pretest scores were analyzed with an independent t-test. As there were no significant differences in the pretest scores, the post-CATCH scores were analyzed with an independent t-test.

Parent, Staff, and Student Attitudes

Hypothesis 3

Parents, staff, and students will respond positively to open-ended and closed-ended questions relating to the full integration of an SPD student in a general education class.

Subjects

A survey was sent home to the 101 parents of the students in the six classes where an SPD student was integrated fully. These parents were representative of the population of this urban school which served a lower middle class neighborhood. The total enrollment of the school was 679. Approximately 18% of these students were minorities; 82%, Caucasian.

A survey was distributed to all 86 instructional staff in the school. Thirty were teacher assistants (general and special education); 56 were teachers (general education, special education, and resource).

Three students were selected randomly from each of the six classes where an SPD student was integrated fully. These 18 students (six first graders, three second graders, three third graders, and six fourth

graders) answered interview questions posed by the researcher.

Research Instrumentation

The parent questionnaire was developed by the researcher to assess the parents' awareness of and support for the full-integration program. The staff questionnaire and the student interview questions were adapted from questionnaires used by the Institute on Community Integration, University of Minnesota (York, Vandercook, Macdonald, Heise-Neff & Caughey, 1989, p. 35). These questions were designed to glean descriptive information to assist in analyzing the program and in developing plans for integration in this school.

The single-page parent questionnaire (see Appendix C for a copy of the questionnaire) included the following questions, to which parents were asked to respond by answering, "Yes," "No," or "Unsure":

- . Are you aware that a student with a severe disability is in your child's class?
- . Is the program successful?
- . Has your child benefitted by having the child with a severe disability in his class?

- . Are there any effects beyond class time?
(If "Yes," use the space below to describe them.)
- . Are you aware that there is a full-time assistant or an additional teacher in the room for the majority of the day?
- . As a taxpayer, do you feel this program is worth the extra money it might cost?

The instrument also included space for parents to make recommendations and comments regarding the full-integration program.

The two-page staff questionnaire (see Appendix D for a copy of the questionnaire) included the following four questions to be answered by all respondents. To the first two questions, staff members were asked to respond by answering, "Yes," "No," or "Unsure." The other two questions, the last two questions on the questionnaire, were open-ended.

- . Was the full-integration program successful?
- . Should the program continue?
- . What recommendations do you have?
- . What guidelines should be included in the plan for 1993-1994?

The other questions on the staff questionnaire were to be answered by the teachers and assistants who were directly involved in the full-integration program. These additional questions follow:

- . Why were you involved in the program?
- . What was the most difficult aspect of the program?
- . What was the best aspect of the program?
- . Note knowledge and/or skills that were attained by the general education students in your class.
- . Note knowledge and/or skills that were attained by the SPD student who was integrated in your general education class.
- . Were academic outcomes of general education students adversely affected by the presence of an SPD student in the class? If "Yes," how were they affected?
- . Did the SPD student in the class put extra demands on the general education teacher's time? If "Yes," what were they?
- . Were there effects beyond class time? If "Yes," describe them.

The student interviews included the following questions:

- . Was it a good idea to have (name of SPD student) in your class? Why?
- . Why was (name of SPD student) in your class?
- . What changes have you noticed in (name of SPD student)?
- . Did you learn anything special by having (name of SPD student) in your class this year? What?
- . Are there other things that (name of SPD student) could do in our school or our city? What?
- . Is (name of SPD student) your friend?
- . Would you like to have a student like (name of SPD student) in your class next year?
- . What do you plan to be when you grow up?
- . Is there anything else you would like to say about (name of SPD student)?

Procedures

During the first week of April, the students in the six classes with a fully-integrated SPD student took the parent questionnaire home to their parents. The questionnaires were returned to the six classroom teachers. The teachers were asked to make daily

reminders to their classes to ensure optimum return. Within one week, 78% were returned. The teachers gave the completed questionnaires to the researcher who analyzed them. The researcher was assisted by a volunteer parent.

The staff questionnaires were distributed at the end of April. The directions on the questionnaire asked that the completed questionnaire be submitted no later than May 5, 1993. Within one week, 59.3% had been returned to the chairperson of the school's full integration action team (FIAT). The researcher analyzed the responses.

For the student interviews, each teacher of a class with a fully-integrated SPD student was directed to select three students at random to be interviewed. The teachers chose to make their selection by having other students (in one case, the integrated SPD student) draw the names from a hat. The researcher interviewed the 18 students, individually, during the final weeks of school, June, 1993. The interviews were audiotaped. These audiotapes were transcribed and then analyzed by the researcher.

Treatment of the Data

Responses to closed-ended questions on the parent and staff surveys and in the student interviews were reported in percentages. Percentages were derived by comparing the number of responses in each response category to the total number of responses to each question. Responses to open-ended questions on the parent and staff surveys and in the student interviews were categorized by salient themes, a qualitative method of analysis suggested by Marshall and Rossman (1989). This method of analysis gave the researcher the latitude to categorize similar responses to each open-ended question.

Social Interaction

Hypothesis 4

In classes with a fully-integrated SPD student, there will be initial and continuing positive social interaction between nondisabled and SPD students.

Subjects

Students with severe disabilities. Six students with severe disabilities participated in this part of the study. Table 2 presents descriptive data on

these students. Grade-level placement, sex, chronological age (C.A.), mental age (M.A.), and Vineland Adaptive Behavior Scales composite standard score are presented. The students' chronological ages, in September, 1993, are expressed in years and months. Mental ages were determined through comprehensive evaluations conducted during the year prior to the students' being integrated fully in general education classes. For five of the six SPD students, the mental age is based on the Bayley Scales of Infant Development. Student number 2's mental age was assessed using the Slossen Intelligence Test.

The paragraphs which follow Table 2 include complete descriptions of each of the SPD students. These descriptions are based on information from informal assessment procedures, including teacher interviews, school records, and the investigator's observations.

Table 2

Descriptive Data on Fully-Integrated SPD Students

Student/ Grade/ Sex	C.A.	M.A.	Adaptive Behavior Score
1/1st/M	5.11	13-14 mo.	32
2/1st/M	6.7	19 mo.	55
3/2nd/F	9.10	9 mo.	29
4/3rd/M	9.4	14-15 mo.	44
5/4th/M	10.11	19 mo.	31
6/5th/F	10.1	14 mo.	28

Student number 1 was a six year-old non-ambulatory male with spastic quadriplegic cerebral palsy with hydrocephalus. His movement patterns were influenced by primitive reflexes, and his muscle tone increased with effort, limiting free, active movement of his arms and hands. His head control was poor. He could follow one-stage commands. He communicated his wants by eye gaze, increased body movements, gesture/reach response,

and some verbalizations. This student was very social and enjoyed attention from his peers and adults. He was responsive to changes in his environment and to activity in the classroom. He was dependant on staff and his peers for self-help/personal hygiene, and positioning needs. Student number 1 was integrated fully in a first-grade class.

Student number 2 was a six-year-old ambulatory male. His expressive language consisted primarily of one-word utterances (e.g., "Hi"). His vocabulary increased as the year progressed. His inappropriate outbursts/screaming decreased as the year progressed. He was successful on a scheduled toileting program. He was a shy student who, in an integrated setting, began to seek attention from others. He seemed interested in his peers and, as the year progressed, his efforts to be a part of the group were more frequent. Student number 2 was integrated fully in a first-grade class.

Student number 3 was a nine-year-old ambulatory female. Her gait pattern was very flat-footed. Her visual attention to fine-motor tasks was poor. She required significant cuing or hands-on assistance to initiate an activity. She was reported to be more

interested and goal-directed as a member of a general education class. Student number 3 was integrated fully in a second-grade class.

Student number 4 was a nine-year-old non-ambulatory male with congenital encephalopathy, neonatal seizures, and hypotonia. He had limited muscle tone and strength. He crept with a wide base of support at the beginning of the school year. As the year progressed, he was able to stand and walk with assistance. He was able to make his needs known by gesturing. He could utter approximately seven words and follow one-step commands. He was very active (i.e., squirmed and fidgeted constantly). Student number 4 was integrated fully in a third-grade class.

Student number 5 was an eleven-year-old semi-ambulatory male with Angleman's Syndrome. He was very active, social, and distractable. He could ambulate with a wide base of support and arms in high guard. His steps were flat-footed. He did not have a functional mode of communication; however, when given an opportunity, he could reach out for whatever he wanted. He needed assistance for all self-help/

personal hygiene needs. Student number 5 was integrated fully in a fourth-grade class.

Student number 6 was a ten-year-old ambulatory female. She was vocal, making one-and-two-word not-always-appropriate (i.e., sounds that were not words) utterances. She could communicate her wants using gestures and vocalizations. She was very social and enjoyed interactions with her classmates. She could feed herself finger food and foods that were speared already. Student number 6 was integrated fully in a fourth-grade class.

Students without Severe Disabilities.

Approximately 112 general education students (fall enrollment), who were in classes with an SPD student, participated in this study. The total number varied slightly throughout the school year due to students' transferring in or out of the school. The students were in six classes on four grade levels. Twenty-six students (13 in each class) were in two first-grade classes, 18 students were in one second-grade class, 18 students were in one third-grade class, and 50 students (25 in each class) were in two fourth-grade classes.

Research Instrumentation

The Educational Assessment of Social Interaction (E.A.S.I.) was used to test this hypothesis. The E.A.S.I. (see Appendix E) is an observational checklist for measuring social interactions between nondisabled and severely disabled students in integrated settings. Field testing with the current form of the E.A.S.I. was completed with a randomly selected sample of eight severely disabled students attending a self-contained school for severely, multiply disabled students. Reliability of the scale was determined based upon a five-minute sample of behavior for six of the eight students. The range of reliability quotients was .77 to 1.0, with a median of .82 and a mean of .84 (Goetz, Haring, & Anderson, 1984).

Data were scored according to the criteria listed below:

. I = Initiation Behavior: This category was used to note who initiated the interaction. An initiation was any cue or behavior directed from one person to another that resulted in a contact between the two persons. Initiations set the occasion for a social, helping, or teaching interaction to occur. Initiations included

vocal/verbal responses, gestural responses, or, for the severely disabled students, eye contact.

. A = Acknowledgement: This was any form of active behavior made in response to an initiation (e.g., smiling, reaching out, hitting). Acknowledgements could take appropriate or inappropriate forms.

. Purpose (of the interaction)

S = Social: Any interaction which was not helping or teaching was scored as "social."

H = Helping: A helping interaction was one in which the recipient was passive and either:

- 1) no active responding was required (e.g., a nondisabled student pushed a severely disabled student in his wheelchair), or
- 2) a response was required but the severely disabled student was given no opportunity to independently perform the response (e.g., a nondisabled student said, "Catch the ball," while simultaneously placing the ball in the severely disabled student's hands). A helping interaction did not require an active response but the severely disabled student could actively acknowledge a response (e.g., by acknowledging, with a smile,

the helping interaction of being pushed in his wheelchair).

T = Teaching: In a teaching interaction, the recipient was expected to make some self-initiated active response to the initiation.

. Topography: Any inappropriate topographies which occurred in an interval were scored regardless of whether or not they occurred as a part of the specific interaction which was occurring in a given interval. Topographies which were noted included the following behaviors:

- . isolation,
- . behavior inappropriate to others, and
- . behavior inappropriate to self (Goetz, et al., 1984).

Procedures

Videotaped observations were made weekly over a six-month period. Students were observed from a minimum of 12 times (for student 4) to a maximum of 21 times (for student 5). The other students were observed as follows: student 1, 18 times; student 2, 20 times; student 3, 18 times; and student 6, 19 times. The number of observations for each of the students

varied due to their absence or non-availability on Fridays. Most observations took place on Fridays as Friday was selected by the teachers as the most convenient day for videotaping. Friday also was chosen because, in physical education class, on that day, students were rewarded by being permitted to select their own activities and to choose with whom they wanted to play.

Each 10-minute observation was videotaped to ensure accurate recording and to enable the researcher later to determine the reliability of the observations. Data collection followed a 20-second-observe, 20-second-record, interval recording system. During each 20 seconds of observation of one SPD student, all interactions between that student and all nondisabled interactors were recorded. Recording data from a videotape gave the researcher the latitude to stop the tape to record data after viewing it for 20 seconds. The researcher ensured that, when the tape was turned on, 20 seconds lapsed (that time which, in the natural setting, would have been used for recording data).

The data were scored according to the criteria listed above (see "Description of the Research

Instrumentation"). The researcher and a university graduate assistant made interobserver reliability checks for all participants. The reliability checks were selected randomly across all phases of the study, including the first and last observations of each participant, for a minimum of 25% of the total number of observations of each student. Interobserver agreement on the occurrence/nonoccurrence of initiations, acknowledgements, the type of interaction (i.e., social, helping, or teaching), and certain behaviors of the students with severe disabilities (i.e., isolation, inappropriate to self, and inappropriate to others) were calculated for each category by dividing the lower total score by the higher total score and multiplying the resulting ratio by 100 to yield a percentage of agreement. Mean interobserver agreement on the occurrence of initiations was 84%, with a range of 76% to 91%; agreement on the occurrence of acknowledgements was 78%, with a range of 74% to 82%; agreement on the type of interactions was 86%, with a range of 63% to 100%; and agreement on the behaviors of the students with

severe disabilities was 93%, with a range of 90% to 96%.

Treatment of the Data

To analyze the data, the researcher determined each SPD student's score (number of occurrences) for each of the criteria noted above: initiations (nondisabled to disabled and disabled to nondisabled), acknowledgements (nondisabled to disabled and disabled to nondisabled), purpose of the interactions (social, helping, or teaching; nondisabled to disabled and disabled to nondisabled), and certain behaviors of the disabled students (isolation, inappropriate to others, and inappropriate to self).

Visual presentations of the data which depicted the frequency of initiations by students without disabilities and the acknowledgements by their peers with disabilities were made for each student. Visual presentations were also made showing whether these interactions were social, helping, or teaching and the frequency of each type. The other data which were gathered, namely, the frequency of initiations by students with disabilities and the responses of their peers without disabilities; and certain behaviors of

the disabled students (isolation, inappropriate to others, and inappropriate to self) were described.

Adaptive Behavior

Hypothesis 5

There will be positive changes in the adaptive behaviors, as measured by the Vineland Adaptive Behavior Scales, of students labeled SPD, when those students are integrated fully in general education classes.

Subjects

Six students with severe disabilities participated in this part of the study. These students are described in the previous section, "Social Interaction."

Research Instrumentation

The Vineland Adaptive Behavior Scales: Classroom Edition was used to test this hypothesis. The items on the instrument measure a child's performance of the daily activities necessary for taking care of oneself and getting along with others. The items are divided into the following four domains, each domain containing the two or three subdomains noted:

- . communication: receptive, expressive, and written
- . daily living skills: personal, domestic, and community
- . socialization: interpersonal relationships, play and leisure time, and coping skills
- . motor skills: gross and fine.

The reliability coefficients, across nine age groups (3 years - 0 months to 12 years - 11 months), for the communication domain range from .88 to .95; for daily living skills from .92 to .96; for socialization from .91 to .96; and for motor skills from .77 to .84. According to the manual for the Vineland Adaptive Behavior Scales: Classroom Edition (1985), these coefficients are satisfactory for the interpretation of individual performance. The manual reports the reliability coefficients, ranging from .96 to .98, for the Adaptive Behavior Composite, as excellent.

Procedures

In September, 1992, the school psychologist assigned to this elementary school administered the Vineland Adaptive Behavior Scales: Classroom Edition to the teachers who had taught the six fully-integrated

students when they were in self-contained SPD classes during the 1991-1992 school year.

In May and June, 1993, the psychologist administered the instrument to the special education teacher who worked with these students during the 1992-1993 school year. The psychologist scored the interviews.

Treatment of the Data

The data collected from the teachers relative to the adaptive behavior of the six fully-integrated SPD students were analyzed by a t-test for related measures. The composite scores were analyzed. In addition, separate analyses of the scores in each sub-domain (i.e., social, communication, and daily living) were conducted.

IEP Objectives

Hypothesis 6

Students labeled SPD who are assigned to general education first, second, third, and fourth grade classes will master a greater proportion of the objectives on their individualized education programs

(IEPs) than they did when they were in self-contained classes.

Subjects

Six students with severe disabilities participated in this part of the study. These students are described in the section of this chapter entitled "Social Interaction."

Research Instrumentation

The fully-integrated students' IEPs were used to evaluate this hypothesis. The number of objectives mastered in the 1992-1993 school year was compared to the number mastered during the 1991-1992 school year to determine the ratio of objectives mastered.

Procedures

The researcher counted the total number of objectives in each IEP. The total number of mastered objectives was noted. To determine a ratio of mastered objectives to unmastered objectives, the number mastered was divided by the total number. Additionally, objectives on each IEP in the areas of communication, language, and social were counted. The total number of objectives mastered in these three areas was divided by the total of objectives in these

three areas to obtain a proportion. The separate analysis of these three combined areas (i.e., communication, language, and social) was conducted because the literature often cites gains in the these domains as justification for integration efforts (Anderson & Goetz, 1983; Baumgart, 1981; Brinker, 1985; Brinker & Thorpe, 1986; Greenwood, Walker, Todd, & Hops, 1976; Ragland et al., 1979; Stainback & Stainback, 1985a, 1985b; Strain, 1977, 1983; Strain et al., 1977).

Treatment of the Data

The data collected from the students' IEPs relative to the proportion of objectives mastered were analyzed by dependent t-tests. Separate analyses were made of the proportion of IEP objectives mastered and the proportion of communication/language/social objectives mastered.

Teachers' Time-Task Demands

Hypothesis 7

There will be no difference in the time-task demands of teachers, as recorded on a time-task log, in

classes with a fully-integrated SPD student and in classes without a fully-integrated SPD student.

Subjects

The following staff members were used to test this hypothesis:

- . the six teachers in general education classes with a fully-integrated SPD student; two were first-grade teachers, one a second-grade teacher, one a third-grade teacher, and two were fourth-grade teachers; and
- . six teachers in classes without a fully-integrated SPD student; two were first-grade teachers, one a second-grade teacher, one a third-grade teacher, and two were fourth-grade teachers.

Research Instrumentation

A time-task log, adapted from an instrument developed by Raver et al. (1992) was used by the staff members to record each time certain behaviors were initiated (see Appendix F for a copy of the Time-task Log). Those behaviors were as follows:

- . preparing tests
- . grading papers
- . recording goals/objectives

- . planning/preparation of materials/equipment for
 - . the class,
 - . a small group, and/or
 - . an individual student
- . planning/preparation of lessons for
 - . the class,
 - . a small group, and/or
 - . an individual student
- . instruction of
 - . the class,
 - . a small group,
 - . an individual student
- . behavior management of
 - . a group or
 - . an individual student
- . conferring/consulting with
 - . parents
 - . staff.

Procedures

The time/task logs were distributed to staff members in December, 1992. The written directions were explained to the teachers by the researcher.

The teachers were asked to complete four daily logs during the next six months. The first log was to be completed prior to an early February meeting which was scheduled to discuss concerns and answer questions about the logs. Staff members noted on their logs each time a particular behavior was initiated.

Treatment of the Data

For each participant, the researcher combined the four daily totals of the number of initiations of each behavior.

To compare the data regarding the frequency of initiations of each behavior by teachers with a fully-integrated student (experimental group) to the frequency of initiations by teachers without a fully-integrated student (control group), independent t-tests were performed.

Additionally, when a significant difference was found between the experimental group and the control group on behaviors involving individual students, the proportion of the teacher's involvement with the SPD student compared to the teacher's involvement with the general education students was determined.

Chapter 4

Results

Chapter 3 discussed the methods and procedures used in this research. Chapter 4 will present the results of the study. The chapter has been divided into seven sections, each of which corresponds with the hypotheses of the study. The hypotheses address the following: student achievement; fourth-grade students' attitudes; parent, staff and student attitudes; social interaction; SPD students' adaptive behavior; proportion of IEP objectives mastered; and teachers' time-task demands.

Student Achievement

The null hypothesis regarding student achievement stated that there would be no difference in the math or reading achievement, as measured by the Iowa Tests of Basic Skills (ITBS), of first, second, third, and fourth graders in classes where a student labeled severely and profoundly disabled (SPD) was integrated fully (experimental/E group) and in first, second, third, and fourth grade classes where an SPD student is not integrated fully (control/C group).

The first grade and fourth grade experimental and control groups were comprised of two classes each. The second and third grade experimental and control groups were comprised of one class each.

The mean (M) national curve equivalent (NCE) ITBS math pretest and posttest scores and standard deviations (SD) for the experimental and control groups from each grade level are presented in Table 3. The mean (M) national curve equivalent (NCE) ITBS reading pretest and posttest scores and standard deviations (SD) for the experimental and control groups from each grade level are presented in Table 4. The mean (M) national curve equivalent (NCE) reading and math pretest and posttest scores and standard deviations for the total experimental/E (six classes) and control/C (six classes) groups are presented in Table 5.

Table 3

Group Mean NCE Scores and Standard Deviations on the
Math ITBS

Group	N*	Pretest		Posttest	
		M	SD	M	SD
Grade 1 E	15	44.47	16.62	42.87	16.27
Grade 1 C	29	38.41	20.69	47.38	16.75
Grade 2 E	16	56.56	15.81	59.69	18.21
Grade 2 C	20	40.45	16.48	54.05	14.93
Grade 3 E	18	37.11	14.88	48.56	14.91
Grade 3 C	19	50.47	17.63	49.58	21.32
Grade 4 E	39	43.05	20.88	49.54	23.78
Grade 4 C	35	55.46	14.85	66.74	14.84
Total Pop.	191	45.77	18.86	53.07	19.54

* N represents the number of students in each group who received both the pretest and posttest.

Table 4

Group Mean NCE Scores and Standard Deviations on the
Reading ITBS

Group	N*	Pretest		Posttest	
		M	SD	M	SD
Grade 1 E	15	38.87	21.67	51.13	20.26
Grade 1 C	28	43.29	15.92	58.64	15.23
Grade 2 E	17	35.29	22.72	44.35	17.18
Grade 2 C	19	35.68	16.00	45.47	21.42
Grade 3 E	18	45.22	16.25	55.33	16.96
Grade 3 C	20	35.20	23.01	44.80	14.95
Grade 4 E	42	42.69	20.82	46.79	19.73
Grade 4 C	37	56.11	15.86	61.78	16.11
Total Pop.	196	43.16	19.95	51.89	18.73

* N represents the number of students in each group who received both the pretest and the posttest.

Table 5

Total Mean NCE Scores and Standard Deviations on
the Reading and Math ITBS

Group			Pretest		Posttest	
		N	M	SD	M	SD
Math	E	88	44.36	19.66	50.15	19.89
Math	C	104	46.61	19.00	54.45	18.22
Reading	E	92	40.77	19.93	49.55	18.61
Reading	C	103	44.90	19.43	53.92	17.37

To control for preexisting differences, the data were analyzed using analysis of covariance (ANCOVA), with the pretest scores used as the covariate. Only the scores of students who took both the pretest and the posttest were used in the analysis. Tables 6 through 13 report the ANCOVA for math and reading ITBS mean scores for each grade level.

Table 14 reports the ANCOVA for the math ITBS mean group scores. Table 15 reports the ANCOVA for the reading ITBS mean group scores.

Table 6

ANCOVA of ITBS Math Scores for First Grade

Source	SS	df	MS	F
Integration				
Effect	572.31	1	572.31	3.27
Math Pretest	4009.71	1	4009.71	22.88*
Error	7185.85	41	175.27	
Total	11767.89	43	273.62	

* $p < .05$

Table 7

ANCOVA of ITBS Math Scores for Second Grade

Source	SS	df	MS	F
Integration				
Effect	273.10	1	273.10	2.05
Math Pretest	4834.84	1	4834.84	36.37*
Error	4386.94	33	132.94	
Total	9494.89	35	271.28	

* $p < .05$

Table 8

ANCOVA of ITBS Math Scores for Third Grade

Source	SS	df	MS	F
Integration				
Effect	639.97	1	639.97	3.26
Math Pretest	4662.48	1	4662.46	23.77*
Error	6668.31	34	196.13	
Total	11970.76	36	332.52	

* $p < .05$

Table 9

ANCOVA of ITBS Math Scores for Fourth Grade

Source	SS	df	MS	F
Integration				
Effect	1382.85	1	1382.85	5.21*
Math Pretest	14210.20	1	14210.20	53.54*
Error	18845.17	71	265.43	
Total	34438.22	73	471.76	

* $p < .05$

Table 10

ANCOVA of ITBS Reading Scores for First Grade

Source	SS	df	MS	F
Integration				
Effect	202.94	1	202.94	1.32
Reading Pretest	6199.90	1	6199.90	40.30*
Error	6154.14	40	153.85	
Total	12556.98	42	298.98	

*p < .05

Table 11

ANCOVA of ITBS Reading Scores for Second Grade

Source	SS	df	MS	F
Integration				
Effect	6.55	1	6.55	.03
Reading Pretest	6013.96	1	6013.92	28.47*
Error	6971.38	33	211.25	
Total	12991.89	35	371.20	

*p < .05

Table 12

ANCOVA of ITBS Reading Scores for Third Grade

Source	SS	df	MS	F
Integration				
Effect	348.97	1	348.97	1.88
Reading Pretest	3341.86	1	3341.86	17.99*
Error	6501.49	35	185.76	
Total	10192.32	37	275.47	

*p < .05

Table 13

ANCOVA of ITBS Reading Scores for Fourth Grade

Source	SS	df	MS	F
Integration				
Effect	673.58	1	673.58	3.70
Reading Pretest	15216.44	1	15216.44	83.55*
Error	13842.13	76	182.13	
Total	29732.15	78	881.18	

*p < .05

Table 14

ANCOVA of ITBS Group Mean Math Scores

Source	SS	df	MS	F
Integration				
Effect	790.96	1	790.96	3.60
Math Pretest	31300.37	2	15650.18	71.30*
Error	41266.61	188	219.50	
Total	72566.97	190	381.93	

* $p < .05$

Table 15

ANCOVA of ITBS Group Mean Reading Scores

Source	SS	df	MS	F
Integration				
Effect	641.95	1	641.95	3.42
Reading Pretest	32186.24	2	16093.12	85.76*
Error	36217.29	193	187.65	
Total	68403.53	195	350.89	

* $p < .05$

Results indicated significant differences between pretest scores in both math and reading for the experimental and control classes on each grade level. The analysis of covariance controlled for these differences.

As the null hypothesis was not rejected for the first, second, and third grades, these results suggest that, for those grade levels, the presence of SPD students had no significant effect on the math achievement, as measured by the ITBS, of the general education students. However, results indicate a significant difference on the posttest scores in fourth grade mathematics, $F(1, 71) = 5.21, p < .05$. These results suggest that the presence of an SPD student in a fourth grade class had a significant effect on the general education students' math achievement, as measured by the ITBS, with the students in the classes where an SPD student was not integrated fully achieving higher scores than those students in classes where an SPD student was integrated fully.

The ANCOVA of the reading scores revealed no significant differences. As the null hypothesis was not rejected, these results suggest that the presence

of SPD students in these first, second, third, and fourth grade classes had no significant effect on the reading achievement, as measured by the ITBS, of the general education students.

The ANCOVAs of the group mean math and reading NCE scores did not reveal significant differences between the experimental and control groups. As the null hypothesis was not rejected for total math or total reading scores, these results suggest that the presence of SPD students in these experimental classes had no significant effect on math or reading achievement, as measured by the ITBS.

Fourth Grade Students' Attitudes

The hypothesis regarding fourth grade students' attitudes stated that the attitudes toward students with disabilities of fourth graders with a student labeled SPD fully integrated in their class would be more positive than the attitudes of fourth graders in a class where an SPD student was not integrated fully. To test this hypothesis, the pretest scores of the Chedoke-McMaster Attitudes Towards Children (CATCH) scale were analyzed using an independent t-test to

examine group mean differences. The mean CATCH score for the experimental group, comprised of those students in the two classes with a fully-integrated SPD student, was 25.33. The mean score for the control group, comprised of those students in the two classes where no SPD student was integrated fully was 24.46. The difference in these scores was not statistically significant.

In June, the group mean posttest scores of the CATCH survey were again analyzed using an independent t-test (see Table 16). The difference in the mean posttest scores of 28.70 for the experimental group and 23.81 for the control group was statistically significant at the .001 level.

Table 16

Analysis of the Mean Posttest Scores on the CATCH

4th Grade	M	SD	t
Experimental	28.70	5.057	
			3.98*
Control	23.81	5.926	

*p < .001

These results support the hypothesis that fourth grade students with a fully-integrated SPD student in their class will have more positive attitudes toward disabled students than students in a fourth-grade class without a fully-integrated SPD student.

Parent, Staff, and Student Attitudes

The hypothesis regarding parent, staff, and student attitudes stated that these groups would respond positively to open-ended and closed-ended questions relating to the full integration of an SPD student in a general education class. To test this hypothesis, parents and staff members responded to survey questions and students responded to interview questions.

Seventy-nine of the 101 parent questionnaires sent home were returned (78%). Table 17 presents the parents' responses to the closed-ended questions. To simplify the presentation of the data, percentages are rounded to the nearest whole number.

Following the table, the parents' responses to the open-ended question which directed them to use the space available to note effects beyond class time are organized by themes. Additionally, in the following paragraph, the parents' recommendations and comments are summarized by themes.

Table 17

Parents' Responses to Structured Questions on Full-
Integration Questionnaire

Question	Percentage		
	Yes	No	Unsure
Are you aware that a student with a disability is in your child's class?	99	0	1
Is the program successful?	81	0	19
Has your child benefitted by having the child with a severe disability in his class?	91	0	9
Has he/she been harmed in any way?	3	96	1
Are there any effects beyond class time?	36	51	13
Are you aware that there is a full-time assistant or an additional teacher in the room for the majority of the day?	92	6	1
As a taxpayer, do you feel this program is worth the extra money it might cost?	86	0	15
Do you feel the program should continue?	91	0	9

The data presented in Table 17 show that almost all of the parents who responded, 99%, were aware of the program, and 81% thought it was successful. No parent said it was not successful, with 19% reporting they were unsure. Ninety-one percent of the parents felt their children benefitted from the program, and 96% indicated their children had not been harmed in any way. Ninety-one percent of those who responded felt the program should continue.

Thirty-six percent of the parents indicated they were aware of effects beyond class time. (These effects are reported below.) Ninety-two percent realized there was additional staff assigned to the program. Eighty-six percent of the respondents felt the program to be worth the extra money it might cost. No one indicated it was not worth the money. Fifteen percent were unsure whether the program was worth the extra money.

Thirty-two parents took advantage of the opportunity to note effects beyond class time. The salient themes follow:

- . The program has made their children more aware and understanding of the needs of disabled persons (11 responses).
- . The children learned to care about, to be more considerate of, and to respect people with special needs (7 responses).
- . The children have learned to accept responsibility (2 responses).
- . The children saw their disabled classmates as friends and, at home, they talked about their activities a lot (10 responses).
- . The children enjoyed the opportunity to have SPD students as classmates (5 responses).
- . The children indicated a career choice based on their experiences (2 responses).

Twenty-nine parents utilized the space for recommendations/comments. The salient themes follow:

- . The benefits to the SPD children (in a full-integration program) should be considered (3 responses).
- . A trained teacher is important to the success of the program (2 responses).

- . The SPD students should be afforded the opportunity to attend class in the least restrictive environment (2 responses).
- . The program should continue (10, 34.5 %, specifically said, "Continue the program," or "Keep the program.").
- . This program has provided students an opportunity to learn about people who are disabled and to appreciate differences in people (7 responses).
- . All students benefit from the program (2 responses).

Also, within the comment section, two parents wrote, "Thank you."

Fifty-one, of the 86 staff questionnaires, were returned (59.3%); 100% of the questionnaires were returned by those directly involved in the program. The first two structured questions on the survey were answered by all of the respondents. Table 18 presents the 49 responses to the first question, "Was the full-integration program successful?"

Table 18

Was the full-integration program successful?

	Yes	No	Unsure
Teachers in the program	3	0	3
Assistants in the program	2	1	1
Staff not directly involved	13	3	23

The data revealed that more than half of the respondents (55%) were unsure of the success of the program. Thirty-seven percent felt the program was successful. Only four respondents (8%) indicated that the program was not successful. Three of these four had not been directly involved in the program.

Table 19 presents the 49 responses to the second question, "Should the program continue?"

Table 19

Should the program continue?

	Yes	No	Unsure
Teachers in the program	4	0	2
Assistants in the program	3	1	1
Staff not directly involved	17	5	16

The data showed that 39% of the respondents were unsure whether the program should continue. Twelve percent of the respondents indicated it should not continue (none of these respondents were teachers directly involved in the program). Forty-nine percent of the respondents indicated the program should continue.

Responses to the next eight open-ended questions, questions 3-10, were given by staff members involved in the program. Following each question, the salient themes are noted.

Why were you involved in the program?

Six of the 11 teachers who responded gave responses that reflected their believing in the program as good for children or as a learning experience for themselves. The others gave more pragmatic responses which reflected their teaching assignment. They seemed to understand the question to be asking what their job was (e.g., providing speech therapy services). The five assistants gave responses which indicated they were asked or chosen to participate in the full-integration program.

What was the most difficult aspect of the program?

Two of the 10 teachers who responded made reference to noise being a problem. Two cited the difficulty of working with an assistant. Two said the lack of training was a problem. Two mentioned the difficulties surrounding teaching too many (general education) students with academic, social, and emotional problems. Lastly, one teacher mentioned the difficulty of adapting the curriculum.

Two of the assistants mentioned noise or disruption as the most difficult aspect of the program.

Two cited the beginning/transition being a problem.

One mentioned a lack of guidelines as a problem.

What was the best aspect of the program?

The 11 teachers who responded mentioned various benefits to the students, both general education and SPD, including, but not limited to, learning compassion, understanding, respect, and acceptance. The 4 assistants also mentioned these benefits students had gleaned from the program as the best aspect.

Note knowledge and/or skills that were attained by the general education students in your class.

The teachers mentioned writing, problem solving, patience, cooperation, compassion, understanding, using a variety of means of communication, and skills associated with working with a student with a disability. Three of the assistants mentioned practical skills for working with disabled students. The other assistant listed sharing, caring, and nurturing as the skills attained by the general education students.

Note knowledge and/or skills attained by the SPD student who was integrated in your general education class.

Eleven teachers responded to this question. Five mentioned the SPD students' talking (i.e., speech acquisition/increased vocabulary). Three mentioned the acquisition of social skills, all of them noting the SPD students' responsiveness to their peers. (Two of these specifically noted that the SPD student became "more responsive.") Four made reference to the students' increased attentiveness. Several of the respondents were very specific listing the acquisition of such skills as cutting, using a "punch machine," holding a pencil/crayon, and being toilet-trained.

The responses by the four assistants were similar to those of the teachers. One added that "her" student does "less stimming." Another added, "The 'regular' children help the SPD kids a lot. They respond to them better than to the teacher or assistant."

Were academic outcomes of general education students adversely affected by the presence of an SPD student in the class? If "Yes," how were they affected?

The responses to the closed-ended portion of this question may be seen in Table 20. The comments staff members made are noted below the table. They are presented according to the job descriptions of the respondents.

Table 20

Were academic outcomes of general education students adversely affected by the presence of an SPD student in the class?

	Yes	No	Unsure
Classroom teachers in the program	1	4	0
Other teachers involved in the program	2	1	2
Assistants in the program	2	2	0

Comments from:

- 1) Classroom teachers in the program
 - . "Children who experienced academic troubles would have had these troubles in any classroom situation."
 - . "The teacher was unable to adequately instruct regular ed students because of attention focused on the integrated student."
- 2) Other teachers in the program (art and music specialists)
 - . "Sometimes . . . when there was noise, control was difficult. Staying on task, for some, was difficult."
 - . "To address the needs of the general education student often leaves out the special child, and vice versa."
- 3) Assistants in the program (Two assistants provided responses which did not answer the question.)
 - . "Those that were distracted would have been distracted anyway. It was like getting used to anything else."

Did the SPD student in the class put extra demands on the general education teacher's time? If "Yes," what were they?

The responses to the closed-ended portion of this question may be seen in Table 21. The comments staff members made are presented according to the job description of the respondents.

Table 21

Did the SPD student in the class put extra demands on the general education teacher's time?

	Yes	Some	No
Classroom teachers in the program	4	0	2
Other teachers involved in the program	2	1	2
Assistants in the program	2	0	2

Comments from:

1) Classroom teachers in the program

- . "Any extra time I spent was voluntary and not mandatory. I did not feel that the time I spent with him was any more than I would do for any of my students."
- . "I spent time every day one-on-one with my SPD student. All of his goals were measured by one-on-one assessment."
- . "Children who accompany Joey to various locations need to be taught things they miss. I use my break time to do this."
- . (two respondents) " . . . extra planning, attention . . . "

2) Other teachers in the program (special education teacher, occupational therapist, art and music specialists)

- . " . . . extra planning/scheduling/meetings with teachers and assistants . . . "
- . "I feel the teachers did a lot of task analysis to determine how to effectively engage the special education student."
- . " . . . instructing how they might adapt the

waiting . . . passing materials or talking extra to regular students as progress or learning took place . . . "

- . "Both deserve my attention but I just can't keep up."

3) Assistants in the program

- . "When the child acts up, the teacher has to stop what she's doing and try to comfort the child in some way."
- . "The SPD student definitely needs a one-on-one basis for any and all aspects of classroom instruction."

Were there effects beyond class time? If "Yes," describe them.

The responses to the structured portion of this question may be seen in Table 22. The comments staff members made are noted below the table. They are presented according to the job description of the respondents.

Table 22

Were there effects beyond class time?

	Yes	No
Classroom teachers in the program	2	4
Other teachers in the program	* 4	0
Assistants in the program	2	1

* Two of these responses were from a teacher's perspective; two were from a student's perspective.

Comments from:

1) Classroom teachers in the program

- . "He recognizes people from school when he runs in to them away from school . . . "

2) Other teachers in the program

- . "IEP meetings" (teacher's perspective)
- . "Art materials and supplies must be in place or organized." (teacher's perspective)
- . "Social aspects carry over as friendships develop."
- . "One SPD student has established relationships with some classmates outside of the school"

environment. This student was invited to sleepovers and parties . . . a definite plus for everyone."

3) Teacher assistants in the program

(The two responses did not address the question.)

The last two questions on the survey were to be answered by all respondents. The responses are summarized below.

What recommendations do you have?

1) Classroom teachers in the program

No two responses were the same. The recommendations made by the teachers were as follows:

- . "Train the teachers and assistants well.
Inservice all staff. Keep communication flowing and non-threatening."
- . "This student should never be placed back in a self-contained SPD classroom."
- . "The child should be placed according to ability level, not age."
- . "Continue with small class sizes in classes that will include an SPD child."
- . "Partial integration - full integration, if teachers volunteer."

- . "Partial integration or 'rapping' in general ed rooms." ("Rapping" is a derivative of "RAP," reciprocal assistance program, a program where students with severe disabilities and general education students work and play together.)

2) Other teachers in the program

No two recommendations made by these teachers were the same. The teachers' recommendations were as follows:

- . "TRAINING - voluntary."
- . "For SPD students (more physically involved), I feel the students would benefit from 1/2 day in general education and 1/2 day in SPD."
- . "Return to the concept of 'Special Friends.'"
- . "Scheduled weekly and/or monthly meetings to discuss goals and progress. I feel the younger SPD students make more progress and it is easier to modify curriculums. Younger SPD students should be integrated earlier."

3) Teacher assistants in the program

No two recommendations made by the assistants were the same. The assistants recommendations were as follows:

- . "Only children who can benefit from the program be included."
- . "More study and information and open communication."
- . "Recommend that he remain in a general education classroom for now."
- . "I don't agree with age-appropriate."

4) Other staff

Eighteen staff members responded. Six suggested that the staff needs training; six indicated that participation should be voluntary. There were one each of other comments. These comments were as follows:

- . "I recommend that the committee act independently of administration and yet cooperatively with faculty council."
- . "Consideration be given to general education students' learning basics they need for the future."
- . "Children in inclusion should not be pulled out of the classroom while general education receives standardized testing."

- . "Applaud the success of the program and favor continuing the program as long as guidelines are followed."
- . "Perhaps to have a little higher functioning of the children so that they can really benefit."
- . "I would like to have a better idea of what objectives/goals the SPD children are to achieve."
- . "None, except that the welfare, progress and general good of all students should be considered."

What guidelines should be included in the plan for 1993-1994?

- 1) Classroom teachers in the program
 - . Two of the six respondents suggested the need for training.
 - . Two mentioned that participation should be voluntary.
 - . Two asked that the practice of smaller classes for those involved in full integration be continued.

2) Other teachers in the program

- . Two of the five who responded in this category suggested planning/workshops.
- . The other comments were as follows:
 - . "The general art curriculum should always be followed with no changes. We should put a full-integration program in place with assistants or helpers."
 - . "1 year at a time."
 - . "Built in team planning time or monthly 'program evaluation' to help allow input and sharing for all members involved with a child."
 - . "Clarify the needs of general and special education students and then plan instructional and integration times to meet the students' needs."

3) Assistants in the program

- . Only two assistants made suggestions. One suggested the importance of reinforcement at home. The other assistant suggested having an assistant with the integrated student all day.

4) Other staff

Sixteen staff members made suggestions. The recurring themes were as follows:

- . Participation by staff member should be voluntary (mentioned by 10 respondents).
- . Training is necessary (mentioned by 5 respondents).

Following the twelve questions, there was space for comments. Twenty staff members took advantage of the opportunity to make a comment.

There were no salient themes among the comments made. One of the comments did cite the need for the program to be voluntary and another noted the need for training of the staff. These comments were consistent with the recurring themes in the above open-ended questions.

Eighteen students responded to the interview questions. The questions are listed below. Following each question are the closed-ended responses and the salient themes of the open-ended responses.

Was it a good idea to have (name of SPD student) in your class? Why?

Eighteen students responded, "Yes."

Two students gave the SPD student's being special as the reason. Four students made some reference to their classrooms providing the SPD students a better opportunity to learn. Two students made a comment about the SPD student's being good. Two students said it was fun to have an SPD student in their class.

Why was (name of SPD student) in your class?

Five students indicated the student was in their class to learn. Seven students said they did not know or were not really sure why the SPD student was in their class. Three students responded, "No," a response which did not answer the question.

What changes have you noticed in (name of SPD student)?

Nine students made a comment about the SPD student's talking or trying to speak having increased. (Three of these were in reference to the same SPD student.) Four students observed the SPD students' walking had improved.

Did you learn anything special by having (name of SPD student) in your class? What?

Five students responded, "No." One said, "I'm not sure. Three gave no answer. Nine said, "Yes."

Two of the respondents made comments that the SPD students are the "same" as they. Two said they learned to be "nice" or "good." Two said they learned to be friends (one of these saying he learned to be nice to everybody).

Are there other things that (name of SPD student) could do in our school or our city? What?

One student responded, "No." Three students did not know. One gave no answer. Three responded with, "I'm not sure," "I don't know," or "Maybe." Thirteen responded, "Yes."

Six gave responses that made reference to the student's learning to talk or learning new words. Two said they thought the SPD student would walk. Two students specifically mentioned the students' having jobs . . . one delivering papers, another teaching art.

Is (name of SPD student) your friend?

All 18 respondents said, "Yes." (One added, " . . . my best friend!") Another said, "He likes to give hugs to us."

Would you like to have a student like (name of SPD student) in your class next year?

All 18 respondents said, "Yes." Seven of them proceeded to say why; four of these mentioning that having an SPD student in the room is "fun."

What do you plan to be when you grow up?

Four of the 18 respondents said they would like to be teachers. (One said, "a handicapped teacher.") Three said, "a doctor." Two said, "a lawyer." Two said, "a police officer/cop." Two said, "president." The other careers mentioned were just mentioned once. (One of these was "a children's author." That respondent added, " . . . because a children's author can write books that the disabled can understand and other children can understand.")

Is there anything else you would like to say about
(name of SPD student)?

Five students said, "No." Six said the fully-integrated SPD student was, "nice." Two said something about liking the SPD student.

The parents' and students' responses support the hypothesis that parents, students, and staff will respond positively to open-ended and closed-ended questions relating to the full integration of an SPD student in a general education class. The responses of the staff do not support the hypothesis. The responses of staff members involved in the program were more positive than those of staff members who were not involved in the program. However, it can not be said that the staff responded positively as hypothesized, as there were several negative comments and many suggestions for improvement.

Social Interaction

The hypothesis regarding social interaction stated that, in classes with a fully-integrated SPD student, there will be initial and continuing positive social interaction between nondisabled and SPD students.

Figures 1 through 6 depict the frequency of initiations by students without disabilities toward each student with disabilities and the frequency of acknowledgements by students with disabilities. There were few initiations by the most of the students with disabilities toward students without disabilities (none for student 1, four for student 2, six for student 3, 13 for student 4, 44 for student 5, two for student 6); therefore, these data are not depicted in a figure.

Only one instance of inappropriate behavior from a student without disabilities directed to a student with disabilities was recorded, i.e., the student without disabilities bounced a ball on the head of student 1. Therefore, the initiations depicted in figures 1 through 6 are all positive. This data shows that there was initial and continuing positive social interaction throughout the six months during which these observations were made.

Figures 7 through 12 depict the type of interactions initiated by the nondisabled students toward their peers with disabilities. This data show there were few initiations coded as "teaching." The

frequency of social interactions was greater than helping initiations for five students (students 1, 2, 3, 5, and 6), and there were more helping interactions than social for one student (student 4).

There were no instances of isolation by four of the six students with disabilities. There were two recorded instances of isolation by student 2, and there was one instance of isolation recorded for student 3. For three students there were no instances of behavior inappropriate to others. For student 2 there were three such instances; for student 4, two; and for student 5, four. For two students there were no instances of behavior inappropriate to self. For student 2 there were 96 instances of behavior inappropriate to self (100% of these were self-stimulating behaviors); for students 4 and 5, one instance each; and for student 6, seven instances.

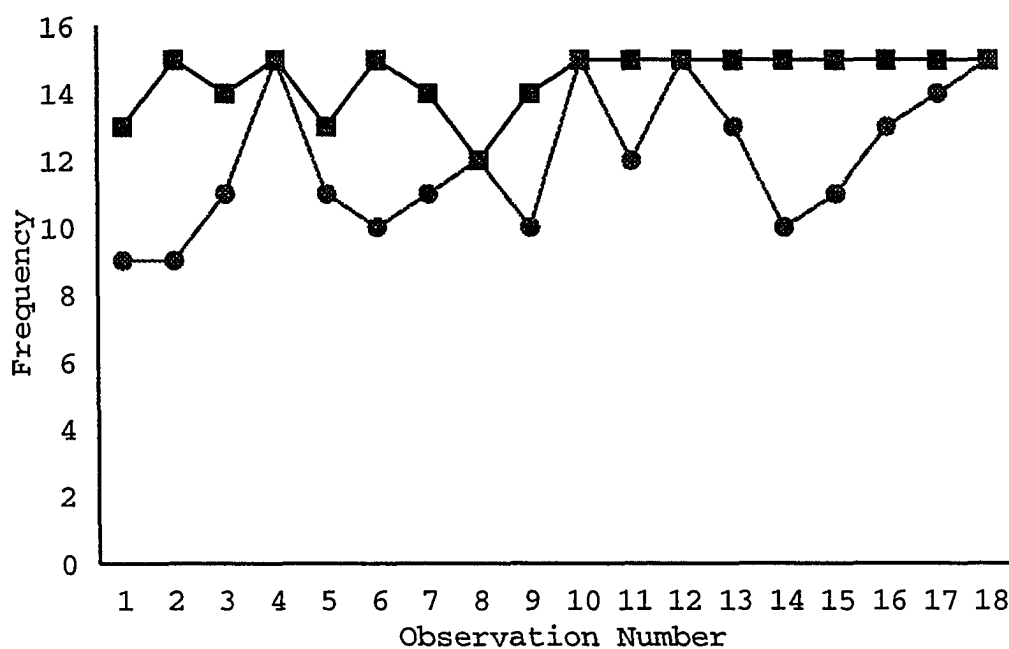


Figure 1. Initiations by students without disabilities; acknowledgements by disabled student number 1.

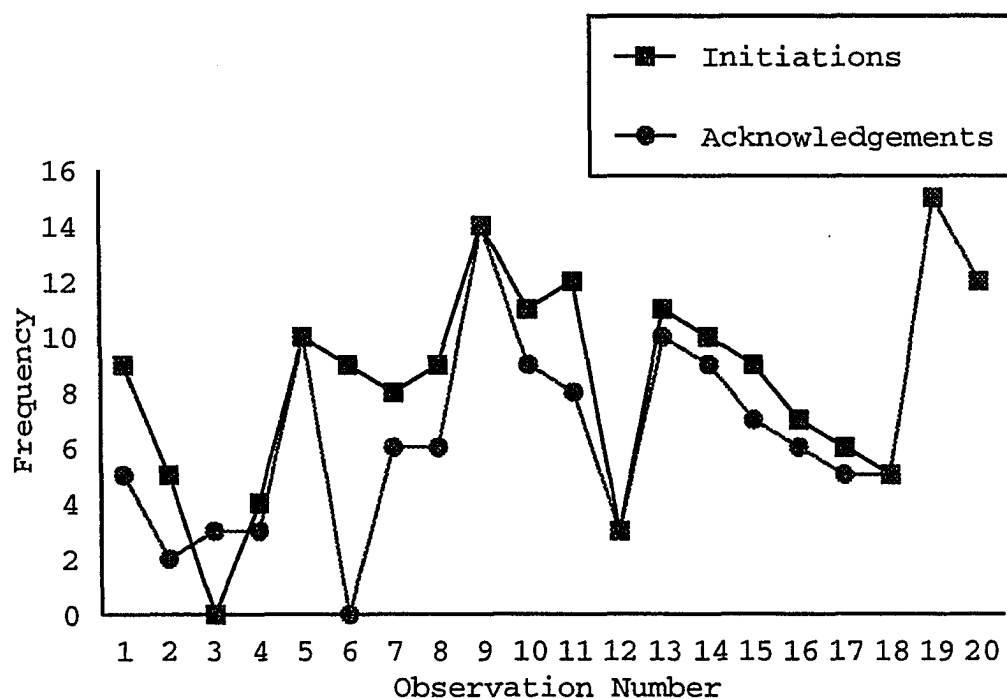


Figure 2. Initiations by students without disabilities; acknowledgements by disabled student number 2.

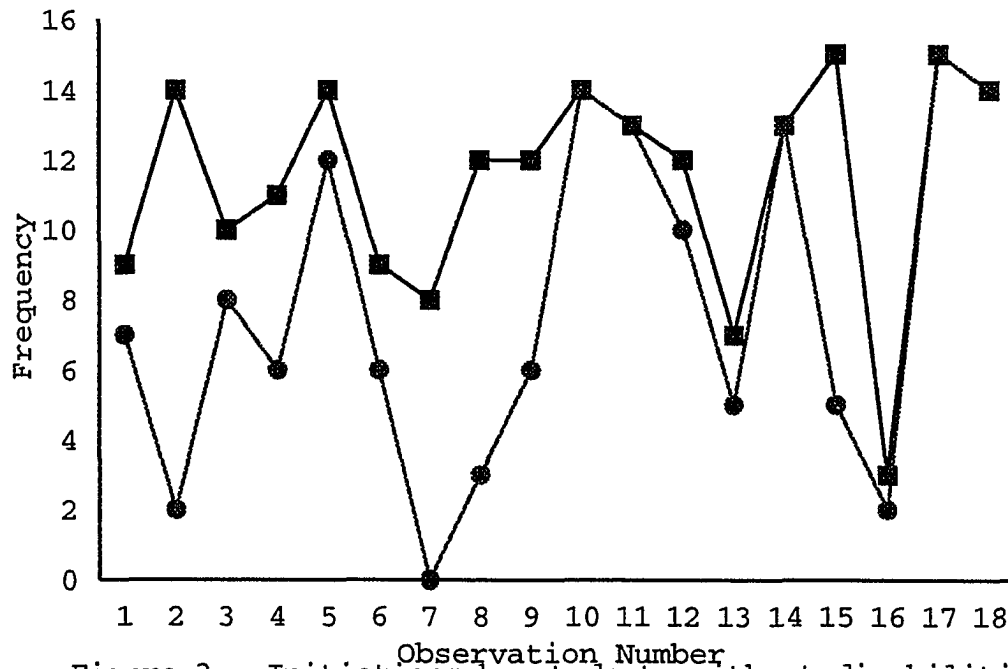


Figure 3. Initiations by students without disabilities; acknowledgements by disabled student number 3.

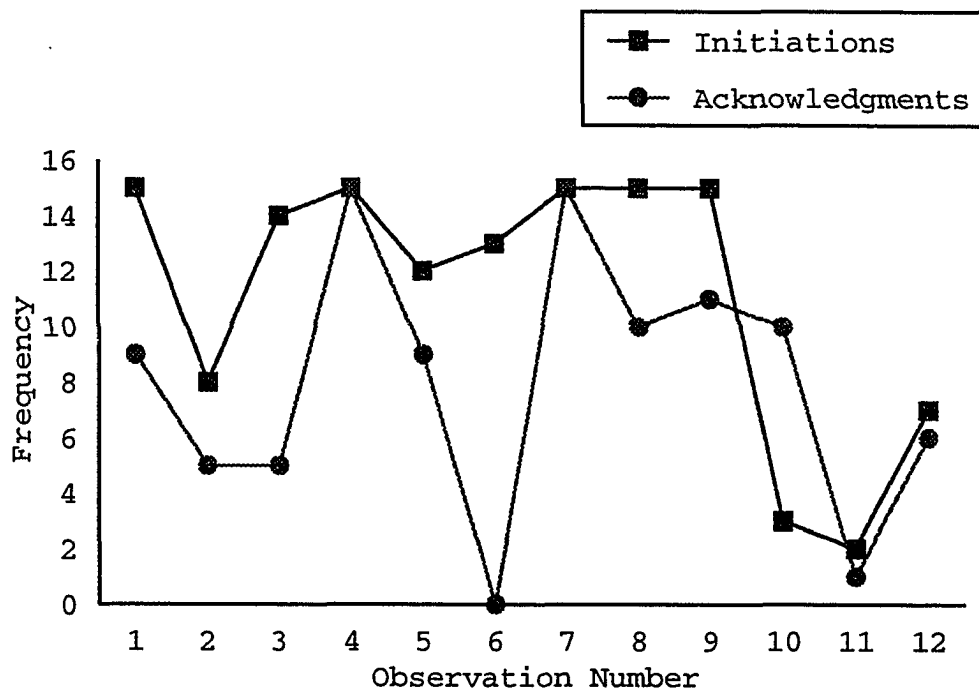


Figure 4. Initiations by students without disabilities; acknowledgements by disabled student number 4.

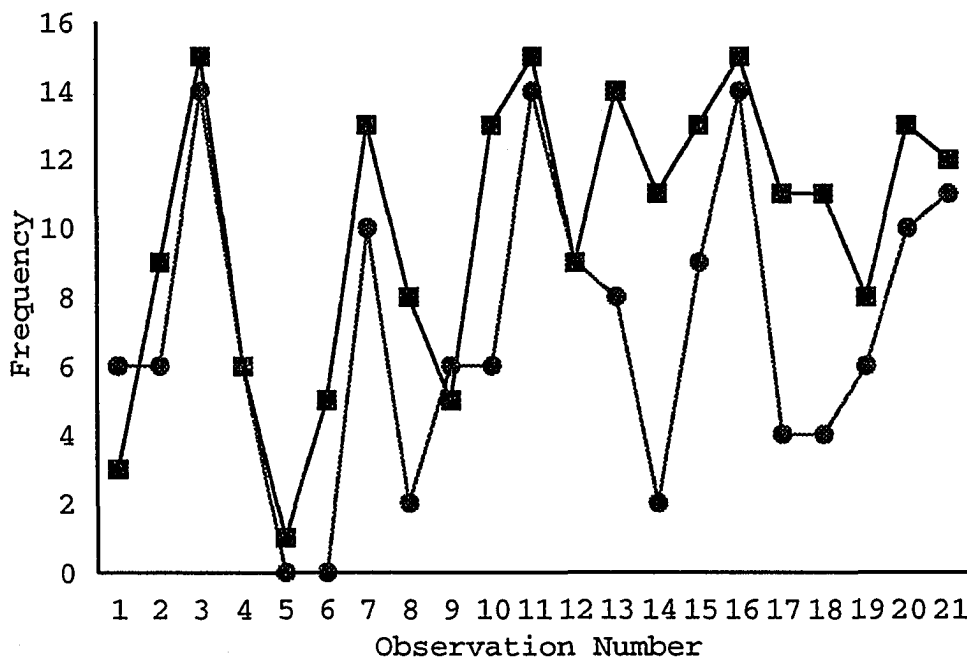


Figure 5. Initiations by students without disabilities; acknowledgements by disabled student number 5.

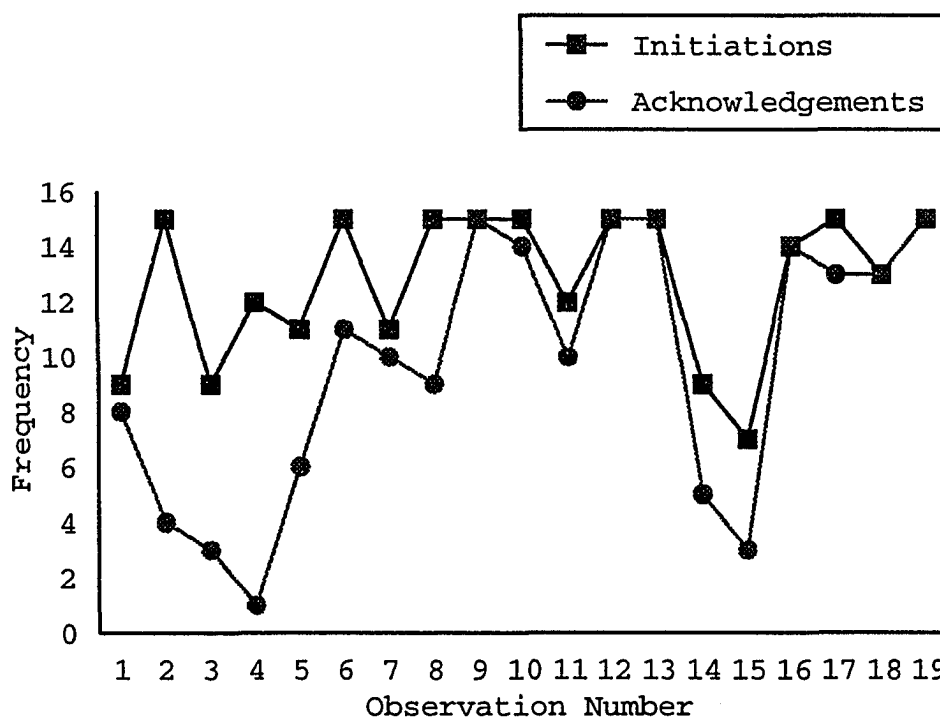


Figure 6. Initiations by students without disabilities; acknowledgements by disabled student number 6.

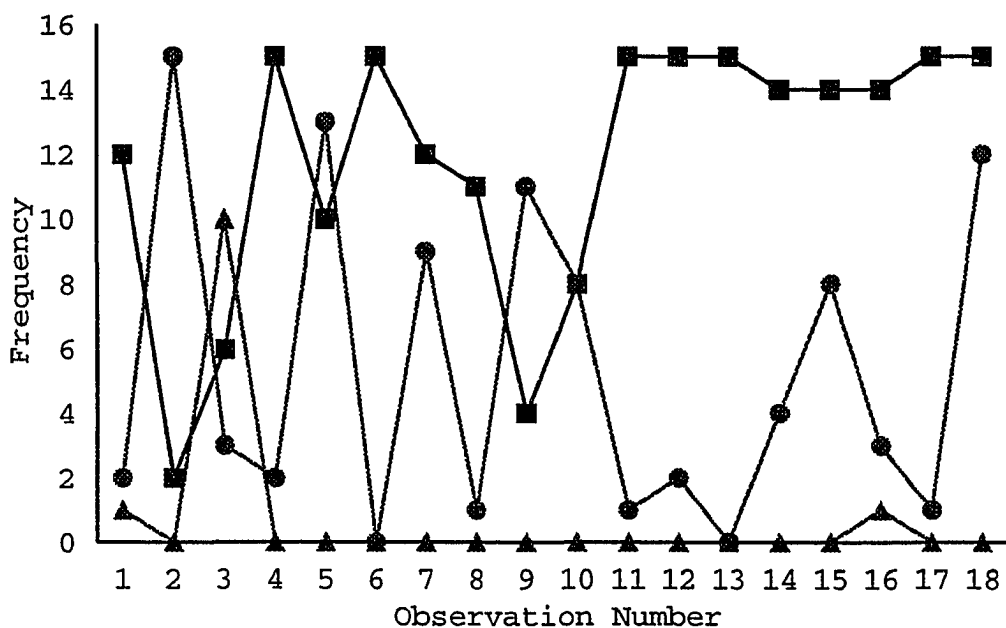


Figure 7. Type of interaction by students without disabilities with disabled student number 1.

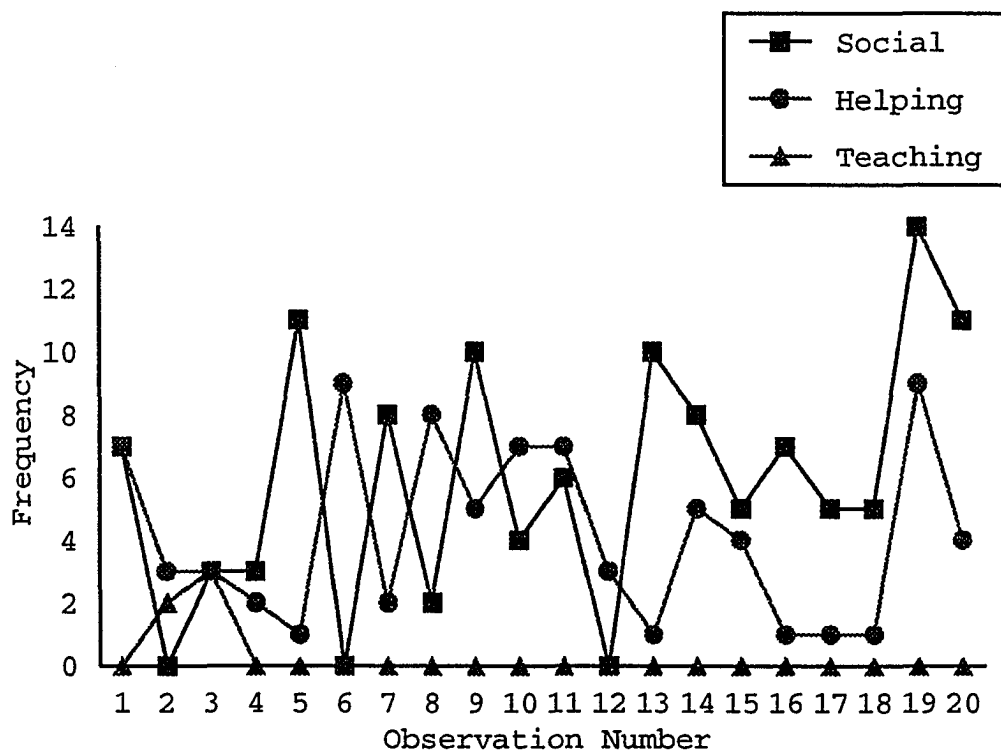


Figure 8. Type of interaction by students without disabilities with disabled student number 2.

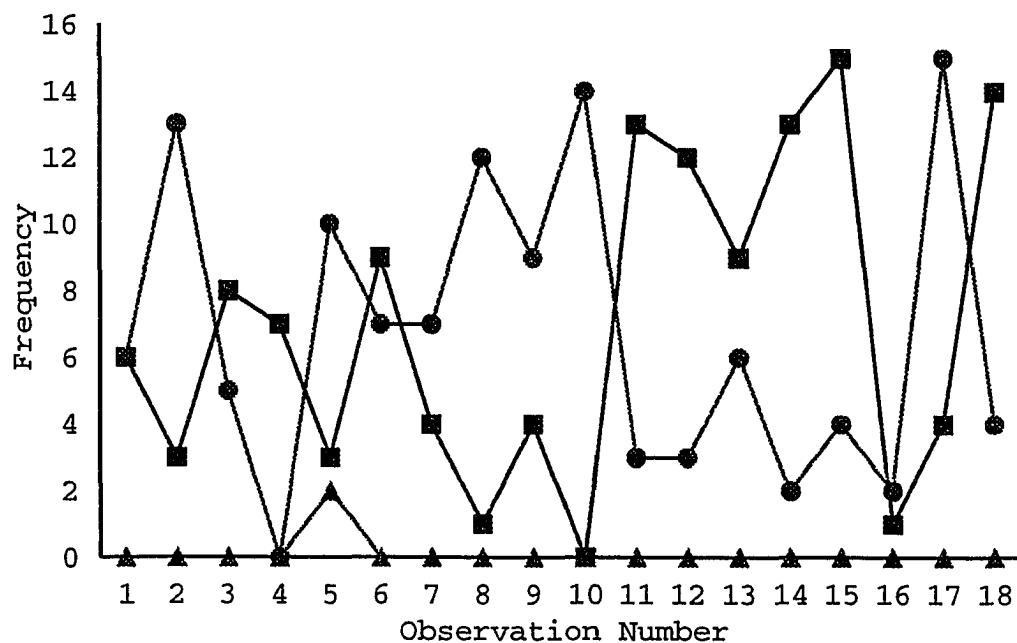


Figure 9. Type of interaction by students without disabilities with disabled student number 3.

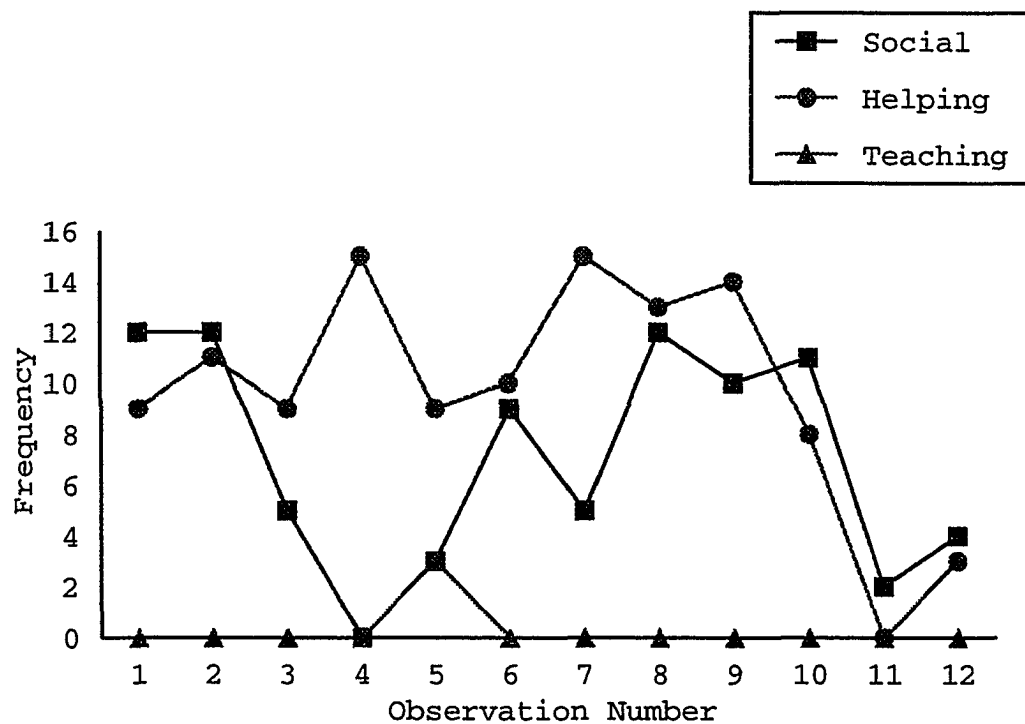


Figure 10. Type of interaction by students without disabilities with disabled student number 4.

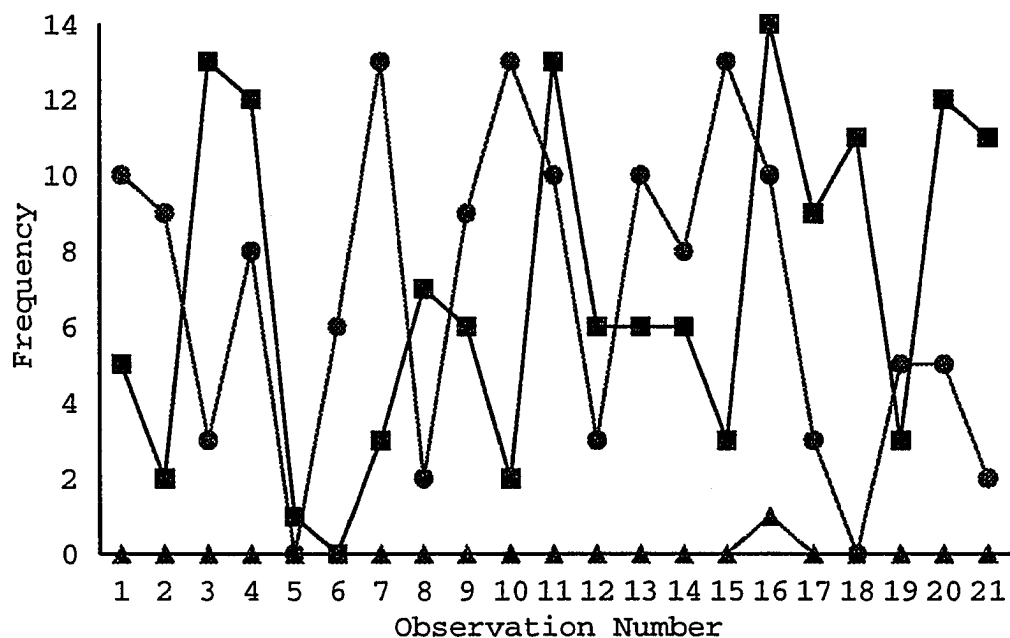


Figure 11. Type of interaction by students without disabilities with disabled student number 5.

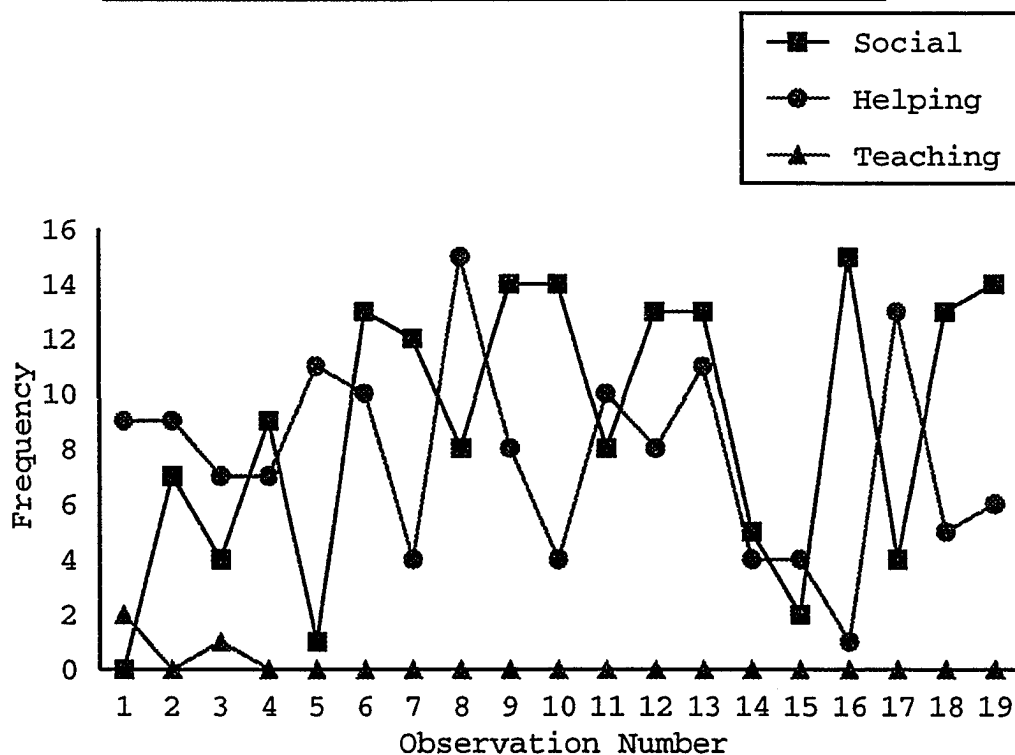


Figure 12. Type of interaction by students without disabilities with disabled student number 6.

Adaptive Behavior

The hypothesis regarding the adaptive behavior of students with severe disabilities stated there would be positive changes in the adaptive behaviors of these students when they were integrated fully in a general education class. The data collected relative to the adaptive behavior of the fully-integrated SPD students were analyzed by a t-test for related measures. The analysis of the composite scores revealed no significant differences between the pretest and the posttest. Likewise, the analysis of the socialization domain revealed no significant differences.

As depicted in Table 23, the analysis of the daily living domain revealed a significant difference between the pretest/the year prior to full integration and posttest/the year of full integration scores with the posttest mean being significantly lower than the pretest mean ($t = 3.796$, $df = 5$, $p < .05$).

As depicted in Table 24, the difference between the means of the pretest/the year prior to full integration and posttest/the year of full integration scores in the communication domain approached

significance ($t = 2.424$, $df = 5$, $p > .05$) with a decrease from the pretest to the posttest.

Table 23

Analysis of Daily Living Domain

Year	M	SD	t
Before integration	39.83	12.94	3.80*
Of integration	34.00	14.49	

* $p < .05$

Table 24

Analysis of Communication Domain

Year	M	SD	t
Before integration	39.50	15.06	2.42
Of integration	35.33	16.37	

IEP Objectives

The hypothesis regarding IEP objectives stated that students labeled SPD who are assigned to general education first, second, third, and fourth grade classes will master a greater proportion of the objectives on their IEPs than they did when they were in self-contained classes. Separate analyses of the total number of objectives mastered and of the number of objectives mastered in the combined areas of communication/language/social were conducted.

Table 25 shows the ratio of objectives mastered by the fully-integrated SPD students in the year prior to their integration full integration (1991-1992) and in the year of their full integration (1992-1993). Table 26 depicts these data as proportions. Table 27 depicts the results of a dependent t-test on the data.

Results indicated there was no significant difference between the proportion of IEP objectives mastered when these SPD students were in self-contained special education classrooms and when they were integrated fully in general education classrooms. The hypothesis that these SPD students would master a greater proportion of their IEP objectives when they

were integrated fully was rejected. From these results, it can be inferred that full integration had no effect on the proportion of IEP objectives mastered by these students.

Table 25

Ratio of IEP Objectives Mastered by Fully-
Integrated SPD Students During the Year of
Full Integration and the Previous Year

Student	Grade	1991-1992	1992-1993
		(self-contained)	(fully-integrated)
1	1	21:50	8:25
2	1	0:58	8:38
3	2	4:63	3:24
4	3	3:59	1:24
5	4	5:69	1:38
6	4	0:66	1:32

Table 26

Proportion of IEP Objectives Mastered by Fully-
Integrated SPD Students During the Year of Full
Integration and the Previous Year

Student	Grade	1991-1992	1992-1993
		(self-contained)	(fully-integrated)
1	1	42%	32%
2	1	0%	21.05%
3	2	6.35%	12.5%
4	3	5.08%	4.17%
5	4	7.25%	2.63%
6	4	0%	3.13%

Table 27

Analysis of the Proportion of IEP Objectives Mastered
by Fully-Integrated SPD Students During the Year of
Full Integration and the Previous Year

Year	M	SD	t
Before integration	10.11	11.90	
			-.56
Of integration	12.58	15.93	

Table 28 shows the ratio of communication/ language/social objectives mastered by the SPD students in the year prior to their full integration (1991-1992) and the year of their full integration (1992-1993). Table 29 depicts these data as proportions. Table 30 depicts the results of a dependent t-test on the data.

Although the proportion of objectives mastered increased for four SPD students, results of the analysis of the data indicated there was no significant difference between the proportion of communication/ language/social IEP objectives mastered when these students were in self-contained special education classrooms and when they were integrated fully in

general education classrooms. The hypothesis that these SPD students would master a greater proportion of their IEP objectives when they were integrated fully was rejected. From these results, it can be inferred that full integration had no effect on the proportion of IEP objectives mastered by these students.

Table 28

Ratio of Communication/Language/Social Objectives
Mastered by Fully-Integrated SPD Students During the
Year of Full Integration and the Previous Year

Student	Grade	1991-1992	1992-1993
		(self-contained)	(fully-integrated)
1	1	13:26	8:12
2	1	0:8	5:15
3	2	0:6	3:14
4	3	1:9	1:11
5	4	0:7	0:11
6	4	0:21	1:12

Table 29

Proportion of Communication/Language/Social IEP
Objectives Mastered by Fully-Integrated SPD Students
During the Year of Full Integration and the Previous
Year

Student	Grade	1991-1992	1992-1993
		(self-contained)	(fully-integrated)
1	1	50%	66.67%
2	1	0%	33.33%
3	2	0%	21.43%
4	3	11.11%	9.09%
5	4	0%	0%
6	4	0%	8.33%

Table 30

Analysis of the Proportion of Communication/Language/
Social IEP Objectives Mastered by Fully-Integrated SPD
Students During the Year of Full Integration and the
Previous Year

Year	M	SD	t
Before integration	10.19	20.01	
			-2.35
Of integration	23.14	24.31	

Teachers' Time-Task Demands

The hypothesis regarding teachers' time on task stated that there would be no significant difference on the time-task demands of teachers in classes with a fully-integrated SPD student and in classes without a fully-integrated student. Independent t-tests were conducted to analyze 17 behaviors which make demands on teachers' time. A significant difference between the time-task demands on the six teachers with a fully-integrated SPD student, the experimental group, and six teachers in classes without a fully-integrated student,

the control group, was found on four behaviors. The behaviors analyzed were as follows (an asterisk denotes those behaviors where a significant difference was found between the groups):

- . preparing tests
- . grading papers
- . recording goals/objectives
- . planning/preparation of materials/equipment for
 - . the class,
 - . a small group, and/or
 - . an individual student
- . planning/preparation of lessons for
 - . the class,
 - * . a small group, and/or
 - * . an individual student
- . instruction of
 - * . the class,
 - . a small group,
 - * . an individual student
- . behavior management of
 - . a group or
 - . an individual student

- . conferring/consulting with
 - . parents
 - . staff.

Tables 31 through 46 depict results of the independent t-tests on this data.

Table 31

Analysis of Preparing Tests

Group	M	SD	t
Experimental	1.50	2.23	
			-1.45
Control	.17	.41	

Table 32

Analysis of Grading Papers

Group	M	SD	t
Experimental	6.83	4.26	
			-.75
Control	5.00	4.15	

Table 33

Analysis of Recording Goals/Objectives

Group	M	SD	t
Experimental	4.33	4.59	-1.75
Control	.75	2.07	

Table 34

Analysis of Planning/Preparation of Materials/Equipment
for the Class

Group	M	SD	t
Experimental	6.83	3.87	.89
Control	9.17	5.12	

Table 35

Analysis of Planning/Preparation of Materials/Equipment
for a Small Group

Group	M	SD	t
Experimental	3.00	2.76	-1.10
Control	1.50	1.87	

Table 36

Analysis of Planning/Preparation of Materials/Equipment
for an Individual Student

Group	M	SD	t
Experimental	5.67	7.34	-1.29
Control	1.67	4.16	

Table 37

Analysis of Planning/Preparation of Lessons for the Class

Group	M	SD	t
Experimental	5.50	3.27	.46
Control	4.50	4.23	

Table 38

Analysis of Planning/Preparation of Lessons for a Small Group

Group	M	SD	t
Experimental	2.17	1.60	2.67*
Control	.33	.52	

*p < .05

Table 39

Analysis of Planning/Preparation of Lessons for an
Individual Student

Group	M	SD	t
Experimental	5.83	4.26	6.18*
Control	.33	.82	

* $p < .05$

Table 40

Analysis of Instruction of the Class

Group	M	SD	t
Experimental	18.83	5.15	.72
Control	20.83	5.00	

Table 41

Analysis of Instruction of a Small Group

Group	M	SD	t
Experimental	9.50	2.24	2.03
Control	5.00	1.79	

Table 42

Analysis of Instruction of an Individual Student

Group	M	SD	t
Experimental	20.83	9.20	2.55*
Control	10.00	4.90	

* $p < .05$

Table 43

Analysis of Behavior Management of a Group

Group	M	SD	t
Experimental	14.67	10.17	.91
Control	24.33	24.01	

Table 44

Analysis of Behavior Management of an Individual Student

Group	M	SD	t
Experimental	25.67	14.24	.43
Control	32.50	35.77	

Table 45

Analysis of Conferring/Consulting with Parents

Group	M	SD	t
Experimental	2.00	2.28	-.60
Control	1.33	1.51	

Table 46

Analysis of Conferring/Consulting with Staff

Group	M	SD	t
Experimental	4.67	5.68	1.07
Control	3.50	6.19	

Results indicated significant differences in the number of initiations of planning/preparation of lessons for small groups, of planning/preparation of lessons for individual students, and of the instruction of individual students. The teachers in the experimental group had more initiations of these behaviors than the teachers in the control group.

Twenty-one out of 31 (68%) of the initiations of planning/preparation of lessons for individual students in the experimental classes were reported, by the teachers, to have been for the fully-integrated students. Fifty-seven out of 114 (50%) of the initiations of the instruction of individual students in the experimental classes were reported, by the teachers, to have been for the fully-integrated students. These results did not support the hypothesis that there would be no significant difference on the time-task demands of teachers in classes with a fully-integrated SPD student and in classes without a fully-integrated student.

Chapter 5

Discussion, Conclusions, and Recommendations

Full integration is an organizational technique where a student, who otherwise might not be included, is a full-time member of a general education class. This research was conducted during the first year of a full-integration program in an elementary school in a large urban school district. In this program, six students with severe disabilities (SPD) were integrated fully in age-appropriate classrooms. This study examined various facets of the school's full-integration program. In that data were gathered throughout the initial year of the program, the analysis is formative. The results of this formative analysis were used to determine program improvement for the following year and to gain empirical evidence to evaluate the effectiveness of the first year of the program.

Purpose of the Study

The purpose of the study was to collect empirical evidence regarding the effectiveness of the full

integration of students with severe disabilities in general education classes. Additionally, the information gathered was used to make improvements in the full-integration program in the school where the research was conducted.

Through this analysis, the researcher sought to answer the following questions:

- 1) Will the presence of an SPD student have any effect on the academic achievement of the general education students in the class where he/she is integrated fully?
- 2) Are the attitudes of students influenced by the presence of an SPD student in their class?
- 3) How do the students, parents, and staff respond to questions about the full-integration program?
- 4) Is there positive social interaction between general education students and their SPD classmates?
- 5) Are there changes in the adaptive behaviors of fully-integrated SPD students?
- 6) Will the educational progress of SPD students change when these students are placed in general education classes?

7) Are there differences in the demands on teachers' time in classes where an SPD student is integrated fully and in classes where no SPD student is integrated fully?

Hypotheses of the Study

To provide answers to the questions about the full integration of students with severe disabilities in general education classrooms, the following hypotheses were tested:

1) There will be no difference in math or reading achievement, as measured by the Iowa Tests of Basic Skills (ITBS), of first, second, third, and fourth graders in classes where a student labeled severely and profoundly disabled (SPD) is integrated fully and in first, second, third, and fourth grade classes where an SPD student is not integrated fully.

2) The attitudes toward students with disabilities of fourth graders with a student labeled SPD fully integrated in their class will be more positive than the attitudes of fourth graders in a class where an SPD student is not integrated fully.

3) Parents, staff, and students will respond positively to open-ended and closed-ended questions relating to the full integration of an SPD student in a general education class.

4) In classes with a fully-integrated SPD student, there will be initial and continuing positive social interaction between nondisabled and SPD students.

5) There will be positive changes in the adaptive behaviors, as measured by the Vineland Behavior Scales, of students labeled SPD when those students are integrated fully in general education classes.

6) Students labeled SPD who are assigned to general education first, second, third, and fourth grade classes will master a greater proportion of the objectives on their individualized education programs (IEPs) than they did when they were in self-contained classes.

7) There will be no significant difference in the time-task demands of teachers, as recorded on a time-task log, in classes with a fully-integrated SPD student and in classes without a fully-integrated SPD student.

In the following section, the findings have been organized to reflect the results of the data analysis on each hypothesis.

Discussion of Findings

Hypothesis 1

There will be no difference in math or reading achievement, as measured by the Iowa Tests of Basic Skills (ITBS), of first, second, third, and fourth graders in classes where a student labeled severely and profoundly disabled (SPD) is integrated fully and in first, second, third, and fourth grade classes and in classes where an SPD student is not integrated fully.

Analysis of covariance (ANCOVA) on the mean NCE scores revealed significant differences between the pretest scores in both math and reading for the experimental and control classes on each grade level. The ANCOVA controlled for these initial differences.

Analysis of the posttest scores revealed a significant difference between the fourth grade experimental and control groups on math achievement, as measured by the ITBS. From these results, although speculation, it can be inferred that the presence of an

SPD student in a fourth grade class had a significant negative effect on the general education students' math achievement.

The significant effect the presence of a student with severe disabilities had on the students' math achievement may have resulted from general education students' being distracted during lessons. The fourth grade math curriculum demands higher-level thinking than the math curriculum in the primary grades. Concentration is necessary in higher-level thinking and distractions make it difficult to concentrate. Additionally, fourth grade math lessons demand greater time on task than primary math lessons. During these longer lessons, especially when a student with severe disabilities was involved directly in the lesson, extended periods of time on task were not as likely as when there were no extraordinary distractions.

Another factor in the fourth grade math scores could have been the teachers. There were likely differences in teaching styles that may have had an impact on the final math achievement scores. Based on observations by the school's administrators, the two fourth grade teachers who were not involved in the

full-integration program seemed to have more structured (more traditional; i.e.; desks in rows, few cooperative learning groups) classrooms than the two fourth grade teachers who did participate in the program. The experimental teachers' willingness to teach in less structured environments could well be why these two teachers were willing to participate in the full-integration program. Due to the difference in teaching and classroom structure, the difference in math achievement scores could very well have occurred had there been no full integration of students with severe disabilities in two of this school's fourth grade classes.

The null hypothesis was not rejected for the first, second, and third grades. On these grade levels, there was no significant difference in math achievement scores in classes with a fully-integrated SPD student and in classes without a fully-integrated SPD student. For the first, second, and third grade, it can be inferred that the presence of an SPD student had no significant effect on math achievement, as measured by the ITBS.

As mentioned earlier, there being no difference between math achievement scores in the control and experimental first, second, and third grades may be attributed to the nature of math lessons in the primary grades. First, second, and third grade math lessons tend to include more hands-on activities which divide the math period into shorter segments. Students would be less likely to lose their concentration during brief lessons or activities. Also, with more hands-on activities in the primary math lessons, there were more opportunities to involve directly the students with severe disabilities in the lessons. Thus, the students with disabilities' being involved in an alternate activity was not a distraction as might have been the case in the fourth grade.

The reading achievement of the students in the experimental and control classes was also analyzed. The null hypothesis was not rejected for first, second, third, or fourth graders' reading achievement, as measured by the ITBS. From these data, it can be inferred that the presence of SPD students in these classes had no significant effect on the reading achievement of general education students.

The absence of a significant difference between the reading achievement of students in classes with a fully-integrated SPD student and in those classes without an SPD student may be attributed to the school-wide emphasis on language arts. All of the classes placed emphasis on reading. Additionally, the students with severe disabilities were more easily included in reading activities, especially being read to by students without severe disabilities.

The analysis of the group mean ITBS math scores did not reveal a significant difference between the experimental and control groups, each comprised of six classes. Likewise, the analysis of the group mean ITBS reading scores did not reveal a significant difference between the experimental and control groups. These results provide support for interpreting group scores with caution and for analyzing subgroup scores.

The results of the analyses of math achievement of students in grades 1, 2, and 3 and reading achievement of students in grades 1, 2, 3, and 4 are consistent with preliminary findings of Sharpe et al. (1992) and Kozleski, LeRoy, and Salisbury (cited in Vandercook et al., 1991). These researchers found the presence of

students with disabilities in general education classes did not have a negative impact on the academic achievement of the students without disabilities in these classes. Similarly, earlier researchers (Bricker & Bricker, 1977; Odom et al., 1984; Strain, 1984) had found that inclusion of students with disabilities in general education preschool classes did not impede skill acquisition of students without disabilities.

Hypothesis 2

The attitudes toward students with disabilities of fourth graders with a student labeled SPD fully integrated in their class will be more positive than the attitudes of fourth graders in a class where an SPD student is not integrated fully.

An independent t-test was used to analyze fourth graders' pretest and posttest scores on the CATCH survey. There was no statistical difference in the pretest scores between the experimental group (classes with an SPD student fully integrated) and the control group (classes with no SPD student fully integrated).

There was a statistical difference between the experimental and control groups' posttest scores, with

the experimental group obtaining a higher mean score; the higher the score, the more positive the attitudes. From these results, it can be inferred that general education students who are exposed to students with severe disabilities have a better attitude about persons with disabilities. This result seems to indicate that the more information students have about persons with disabilities, the more comfortable they are with them and the better they understand them.

The finding that students with greater exposure to classmates with severe disabilities have a better attitude about persons with disabilities is consistent with earlier research (Armstrong et al., 1987; Cates et al., 1980; Condon et al., 1986; DeBevoise, 1986; Esposito & Reed, 1986; Voeltz, 1980a, 1980b, 1982). These researchers found that experiencing direct, structured contact with persons who have disabilities promotes more positive attitudes in students without disabilities.

The finding that exposure to persons with disabilities enhances understanding has implications for the future. Today's students are tomorrow's politicians, voters, taxpayers, employers, leaders,

policy makers, medical professionals, teachers, and parents. All of tomorrow's adults could benefit from a better understanding of those with special needs who are a viable part of this nation's citizenry. Citizens with disabilities have special needs which require support. This support is most likely to be given by persons who understand the needs and have positive attitudes about individuals with disabilities.

Hypothesis 3

Parents, staff, and students will respond positively to open-ended and closed-ended questions relating to the full integration of an SPD student in a general education class.

Results of a survey sent home to parents of students in the classes with a fully-integrated SPD student were overwhelmingly positive. Particularly significant were the 81% who indicated the full-integration program was successful, the 86% who responded "Yes" to the question that asked them, "As a taxpayer, do you feel this program is worth the extra money it might cost?", and the 91% who felt the program should continue.

It is likely that some of the parents who were surveyed based their positive responses on observations they made while serving as class volunteers or while visiting the class. The majority, apparently, based their responses on feedback from their children or on their own personal experiences with persons with disabilities.

The positive results of the parent survey are consistent with the research of Rosenbaum et al. (1987). These researchers found that exposure to and familiarity with disabled people can have a positive influence on attitudes toward persons with disabilities. Although, in the present study and for most of the persons surveyed, it was the children of the parents who were surveyed who had the direct exposure to the persons with disabilities, not the parents themselves. Relevant research by McDonnell (1987) found that parents of children with severe disabilities who attended integrated programs were overwhelmingly positive about the placement of their children. Johnson and Vandercook (1991) interviewed 15 parents of kindergartners and first graders who had been in inclusive classrooms. Similar to the results

of this study, many of the parents interviewed in the Johnson and Vandercook research reported positive changes in their children. They attributed some of these changes to their children's membership in inclusive classes.

Results of the staff questionnaire revealed apprehension about the full-integration program especially among staff who were not involved directly in the program. More than half of the respondents, 55%, were unsure as to the success of the program, 8% indicated the program was not successful, and 37% felt the program was successful. Thirty-nine percent of the respondents were unsure whether the program should continue, 12% indicated it should not continue, and 49% indicated the program should continue.

These findings suggest a need for involving seemingly unaffected staff, together with those who are involved, in the planning and implementation of the integration program. These data also suggest the importance of effective communication within the school.

There is a possibility that some staff members' responses were based on their perception that the

program was developed for one person's research project. Additionally, some staff members may have felt threatened by the program. Special educators may have felt their jobs would be eliminated or change radically, should the practice of full integration expand. General educators may have felt they would be forced to teach students they were not trained to teach.

Responses to the staff survey by the teachers and teachers' assistants directly involved in the program survey are generally consistent with earlier research that found teachers' attitudes about other full-integration programs were positive (Giangreco et al., 1993; West & Cummins; York et al., 1992). The responses of other staff members (i.e., assistants and teachers not involved directly) are not consistent with the results of these earlier studies. Additionally, suggestions and comments made by teachers and cited earlier in this research are consistent with the data reported in this study. For example respondents in the York et al. (1992) study recommended ongoing communication and that participation in integration efforts be voluntary.

Results of interviews conducted by the researcher with three randomly-selected students from each of the six classes where an SPD student was integrated fully were overwhelmingly positive. All 18 respondents responded "Yes" to the question, "Was it a good idea to have (name of SPD student) in your class?" Thirteen of the respondents were aware of and described changes in their classmate who had a disability. Half of the respondents, nine, said they had learned something special by having the SPD students in their classes. Thirteen of the interviewees were able to describe things that the SPD student could do in school or in the city. All of the respondents said the SPD student was their friend.

This researcher has observed that children are generally receptive to differences and comfortable with most changes. The full-integration program did not seem unusual to the students in the classes where an SPD student was included. These general education students simply accepted their peers with disabilities as they would any other students. If anything about their acceptance was inappropriate, it was their efforts to do too much for the students with

disabilities. Early in the project, when this researcher asked a first grader why a student with severe disabilities was in his first grade class, the first grader responded, " . . . because he's six!" That positive attitude prevailed during the student interviews.

Hypothesis 4

In classes with a fully-integrated SPD student, there will be initial and continuing positive social interaction between nondisabled and SPD students.

There was initial and continuing positive social interaction throughout the six months during which data were gathered. The frequency of initiations by students without disabilities toward students with severe disabilities fluctuated, between observations, but did not subside. Likewise, the acknowledgements by students with disabilities did not subside. It appears that neither population tired of the attention from the other.

The majority of the initiations were social and helping in nature. Few initiations were coded as "teaching." These findings seem to indicate that the

general education students were doing what seemed natural to them; i.e., building friendships, playing with their friends, and helping their peers. It is likely that fewer teaching interactions occurred as the general education students were not trained to teach the students with special needs. There is research which supports peer training as a means to achieve positive outcomes from students with disabilities (Brady et al., 1984; Chin Perez et al., 1986; Odom et al., 1985; Peck et al., 1978; Strain, 1984; Staub & Hunt, 1993). It is likely that training peers to teach students with severe disabilities would have resulted in more interactions being coded as "teaching" in the present study.

Much of the research in the area of social interaction emphasizes training peers to interact with students with disabilities. In the present study, peers were not trained but social interaction did not wane. Had the peers without disabilities received training on how to teach specific skills or behaviors to the students with disabilities, there may have been increased social skills, as well as increases in other adaptive behaviors, of the students with disabilities.

Hypothesis 5

There will be positive changes in the adaptive behaviors, as measured by the Vineland Behavior Scales, of students labeled SPD when those students are integrated fully in general education classes.

The data gathered relative to the acquisition of adaptive behavior skills by the SPD students who were integrated fully was analyzed with dependent t-tests. No significant difference was found between the Vineland Behavior Scales pretest and posttest composite scores. These results indicate that, overall, the SPD students acquired adaptive behavior skills while in an inclusive environment.

Likewise, the analysis of the socialization domain pretest and posttest scores revealed no significant difference. This result apparently is a reflection of the countless opportunities the SPD students had to interact with their general education peers.

The analysis of the daily living domain revealed a significant difference between the pretest and the posttest scores, with the pretest score being higher than the posttest score. This indicates that, during the year of full integration, there was a significant

decrease in the daily living skills of the SPD students. This difference may be explained by the lack of emphasis on teaching functional skills in a general education classroom.

The separate analysis of the communication domain revealed a difference with a decrease in the SPD students' communication skills from the pretest to the posttest. This result may be an indication that the students with severe disabilities did not have to communicate their needs and wants as frequently as they did in a self-contained setting. In the inclusive setting, the general education students second guessed the students with disabilities and did certain tasks for them for them (e.g., handed them items for which they might otherwise have to "ask"), eliminating the need for the SPD students to communicate.

As noted in this section, and for the possible reasons given, the positive changes in adaptive behavior which were predicted for the fully-integrated SPD students did not occur. There was even a significant decline in daily living skills.

The data in the present study are not consistent with earlier research which found increased

communication and skills in students with disabilities who had been integrated in general education classes (Buysse & Bailey, 1993; Hunt et al., 1988; Kozleski & Jackson, 1993; Lord & Hopkins, 1986; Meyer, 1987). There was scant information available in the literature on the acquisition of daily living skills.

Hypothesis 6

Students labeled SPD who are assigned to general education first, second, third, and fourth grade classes will master a greater proportion of the objectives on their individualized education programs (IEPs) than they did when they were in self-contained classes.

A dependent t-test was used to analyze the difference between the proportion of IEP objectives mastered by SPD students the year before their full integration in general education classes and the year of their full integration. Results indicated there was no significant difference between the proportion of IEP objectives mastered when these students were in self-contained special education classes and when they were integrated fully in general education classrooms. A

separate analysis on the proportion of communication/ language/social IEP objectives also revealed no significant differences.

From these results, it can be inferred that full integration had no effect on the proportion of IEP objectives mastered by SPD students who were integrated fully in general education classes. The SPD students did not master a greater proportion of IEP objectives when they were integrated fully as had been predicted they would.

This failure of the SPD students to master a greater proportion of their IEP objectives while in an integrated setting may be attributed to the content of the IEP objectives. Many of the objectives seemed to have been carried over from the year(s) that the students were in self-contained environments and were not rewritten for integrated settings. Additionally, analysis of the proportion of IEP objectives mastered in an integrated versus a segregated setting might not have provided a true picture of skill acquisition. In general, IEPs, are subjective with the interpretation of mastery left up to many different professionals and,

certainly, IEPs vary from student to student, making comparisons difficult.

Hypothesis 7

There will be no significant difference in the time-task demands of teachers, as recorded on a time-task log, in classes with a fully-integrated SPD student and in classes without a fully-integrated SPD student.

Independent t-tests were used to analyze the data gathered to test this hypothesis. The total number of initiations of each behavior made by the six teachers in the experimental group was compared to the number of initiations of each behavior made by the teachers in the control group.

Results reflected significant differences in the number of initiations of planning/preparation of lessons for small groups, of planning/preparation of lessons for individual students, and of the instruction of individual students, with the teachers in the classes with a fully-integrated SPD student initiating these behaviors more than the teachers in classes without a fully-integrated student. Further analysis

of this data revealed that 68% of the initiations of planning/preparation of lessons for individual students in the experimental classes was for the fully-integrated student. In these same classes, 50% of the initiations of instruction of individual students was for the fully-integrated student. A difference was found between the number of initiations of whole-class instruction in the experimental and control classes, with the teachers in the classes without a fully-integrated SPD student reporting more initiations of this behavior. This difference was not significant.

These data indicate that the teachers in the classes with a fully-integrated SPD student did have to devote more time to that student. Teachers without a fully-integrated student were able to devote more time to whole-class instruction.

The findings of this study, which compared the time-task commitments of teachers in integrated and general education settings, extend the related research on how teachers in special education settings spend their time (Gable et al., 1992; Raver et al., 1992; Sargent, 1981; Zabel et al., 1988). Additionally, this study confirms the conclusion of Jenkins and Pious

(1991) who deduced, from a review of the literature, that the tasks which must be assumed by teachers in inclusive settings are enormous.

Conclusions

Student Achievement

The results of this study indicate that the full integration of students with severe and profound disabilities (SPD) had no significant effect on the math or reading achievement of general education students in the primary grades, grades 1, 2, and 3. However, it appears that the full integration of SPD students, did have an effect on the math achievement of fourth graders. The full integration of SPD students did not have a significant effect on the reading achievement of these fourth graders.

The impact which the presence of a student with severe disabilities may have on the academic achievement of general education students is an important factor to consider when planning full-integration programs. This research has provided evidence that math achievement of students in the intermediate grades may be adversely affected by the

presence of an SPD student. Full-integration will be accepted by educators and the general public only if it is found not to harm any students.

To ensure that no harm comes to any students and that there is optimum skill acquisition, it is imperative that the teachers and paraprofessionals in the inclusive classrooms are trained to teach in these special environments. Additionally, it seems appropriate to have an alternative environment available for students who disrupt the learning of others. It is up to those who design integration programs to ensure that no harm comes to students with or without disabilities. Based on the findings of this research, it seems the best way to safeguard student learning is to train the staff, and in some cases the students without disabilities, to teach in inclusive environments.

Fourth-grade Students' Attitudes

Based on the findings of this study, the full integration of SPD students in their classes had a positive effect on the attitudes of fourth graders toward persons with disabilities. Ideally, this

positive attitude will carry over into these students' future school years and adult lives making them more tolerant of human differences. This researcher's review of the literature did not reveal any longitudinal research which verifies that this happens.

Parent, Staff, and Student Attitudes

Parents of general education students and students with disabilities in the six classes with an SPD student fully integrated were very positive about the program. Their comments provided evidence that parents want to be kept informed of special programs such as full integration.

In contrast to the positive feedback from parents and students, staff members were not as positive about the full-integration program. Survey results revealed a need for more information to be disseminated to the entire staff and to a need for involving all staff members in making decisions about future full integration.

On each of the four grade levels, first, second, third, and fourth, classmates of students with severe disabilities responded positively to questions about

these disabled students' integration in their general education classes. The general education students did not seem to fear the unknown. Instead, they were willing to accept the challenges and differences that the students with disabilities brought with them. The general education students' enthusiasm and acceptance should serve as a model for decision makers and staff members.

Social Interaction

The interaction between students with disabilities and students without disabilities, as documented in this research, seemed to occur naturally, especially during unstructured time. Additionally, the attention given the students with disabilities by their peers without disabilities did not appear to wane across time. It seems, therefore, that, without intervention, positive social interaction may be derived from the placement, in general education environments, of students with severe disabilities. This conclusion is not consistent with the research, cited earlier, which emphasizes a need for intervention in the form of training peers without disabilities to interact with

their peers with disabilities. The inconsistency could be a result of the focus of this research which was on social interactions during unstructured time.

The literature on integration and inclusion includes information on intervention strategies. These strategies include training general education peers to interact with students with disabilities. Training peers could be important when specific IEP goals, which can best be taught by general education students, need to be taught. Training them as peer tutors might also encourage reticent general education students to interact, socially, with their peers with disabilities when they do not interact readily with their classmates without disabilities.

Adaptive Behavior

From the data collected for this research, it appears that certain adaptive behavior skills are impeded for students with severe disabilities when these students are integrated fully in general education classes. The apparent decline in the acquisition of daily living skills could be a result of the lack of emphasis on teaching functional

skills in a general education classroom. Not teaching functional skills does not explain the decline in the communication domain. One would predict an increase in communication skills as an outcome of the social interaction between students with disabilities and students without disabilities. This result could point to a need for training general peers to teach and reinforce certain specific communication skills while interacting with the students with disabilities. The failure of SPD students to attain a greater number of communication skills than they did in a self-contained setting could also indicate a need for a more effective instrument to measure skill acquisition.

Analysis of the socialization domain did not reveal any significant changes. This result seems inconsistent with what one would expect given the positive results of the observational data on the social interaction between students with severe disabilities and their classmates without disabilities. These data revealed positive social and helping interactions throughout the six months during which the study was conducted. One would expect an increase in the acquisition of socialization skills in an

integrated setting. Another instrument might reveal a positive change in the socialization domain.

IEP Skill Acquisition

From the year prior to their full integration through the year of their full integration there was an increase in the proportion of IEP objectives mastered by three of the six SPD students who were integrated fully in general education classrooms. There was a decrease in the proportion mastered by the other three students. Statistical analysis of these data revealed no significant difference between the number of objectives mastered prior to their full integration and the year of the SPD students' full integration..

A separate analysis of the communication/language/social objectives revealed that, while in a general education setting, four of the SPD students mastered a greater proportion of these objectives. One student mastered a smaller proportion of communication/language/social objectives, and the proportion of these objectives mastered by the final student remained the same. Statistical analysis of these data revealed no significant difference.

From these data, it can be inferred that full integration had no effect on the proportion of IEP objectives mastered by students with severe disabilities when these students were included in age-appropriate general education classes. This may indicate that skill acquisition is not effectively measured by analyzing the proportion of IEP objectives mastered by SPD students who are fully integrated in general education classes. Analyzing the contents of IEPs and setting specific qualities for the IEP objectives may be better means of examining IEPs.

Teachers' Time-Task Demands

Six teachers in general education classrooms (control) and six teachers in general education classrooms with a student with severe disabilities fully integrated in their classes (experimental) documented how they spent their time over the course of four days. The statistical analyses of the behaviors which made demands on these teachers' time revealed that the teachers with the fully-integrated students devoted a great deal of time to those SPD students and

teachers without a fully-integrated student devoted more time to whole-group instruction.

The teachers in all of the experimental and control classes spent a comparable amount of time preparing tests; grading papers; planning/preparing equipment/materials for the class, small groups, and individual students; and planning/preparing lessons for the class. The teachers also spent a similar amount of time instructing small groups, managing the behavior of a group or of individual students, and on conferring/consulting with parents and staff.

From the time-task data, it can be inferred that teachers who accept the responsibility of fully integrating a student with severe disabilities in their classes will devote extra time to that student. Additionally, these teachers in fully-integrated classes will spend less time on whole-group activities than teachers with no fully-integrated student.

Summary

These data provide a mixed picture of the effects of the full integration of students with severe disabilities in age-appropriate general education

classes. The presence of a student labeled SPD did not appear to influence the math or reading achievement of first, second, or third graders without disabilities. Although the presence of these students did not seem to influence fourth graders' reading achievement, it may have influenced their math achievement.

Fourth grade students in general education classes with a fully-integrated SPD student showed improved attitudes toward persons with disabilities while the attitudes of students in the control classes did not improve. Parents of general education and special education students from the integrated classes and a random sample of students from these classes expressed positive attitudes about the full integration of students with severe disabilities in general education classrooms. While some staff members also had positive attitudes about the program, many did not.

There was initial and continuing positive social interaction between fully-integrated SPD students and their nondisabled classmates. This result was consistent with the hypothesis which stated this would be the case.

Although there was an increase in the proportion of IEP objectives in the areas of communication and social, it was not statistically significant and was not reflected in adaptive behavior score change in these same areas. As measured by the Vineland Adaptive Behavior Scales, although not statistically significant, there was a decline in the scores in the communication domain and there was no significant change in the socialization domain. There was a statistically significant decline in adaptive behavior in the area of daily living.

The time-task demands of teachers were similar in many areas. The behaviors which demanded more time from the teachers with fully-integrated SPD students in their classes related to planning for and instructing that student. Teachers in classes without a fully-integrated SPD student were able to spend more time instructing the whole class.

These mixed results indicate that careful consideration must be given when placing a student with severe disabilities in a general education classroom. Full integration may not be appropriate for every student with severe disabilities (e.g., a

severely medically involved student whose well being might be in jeopardy). Likewise, based on teachers' expressed attitudes, teaching a student with severe disabilities may not be appropriate for every general education teacher. Teachers must be willing participants. Students with severe disabilities will not receive optimum services when served by unwilling teachers. Preparing beginning teachers while they are in teacher training programs and training practicing teachers to teach in inclusive environments will be a key to the success of future programs.

Additionally, a full-integration program must have the support of the school division. As any program, full integration must reflect the school division's and the individual school's philosophy and mission.

Recommendations for Future Research

The findings of this study raise a number of questions that suggest the need for additional research prior to the widespread inclusion of students with severe disabilities in general education classes. The recommendations for future research have been organized by the areas investigated in this research.

Student Achievement

Research on the effects of the full integration or "inclusion" of students with severe disabilities on the academic achievement of general education students is limited. More research of the nature of the present study is necessary before conclusions regarding the practice of full integration of students with severe disabilities and its effects on academic achievement can be drawn. Further investigation on the effects of integration on the academic performance of general education students will provide evidence for educators, parents, and the general public as they plan optimum programs for general and special education students.

As in the present formative analysis, academic achievement should be analyzed by pre and posttesting classes where students with disabilities are integrated fully. In this analysis, the group scores (i.e., experimental and control) did not reveal significant differences. Separate analyses, by grade level, did reveal a significant difference between the fourth grade experimental and control classes on math achievement. This seems to indicate a need for careful analysis of achievement test data, by grade level.

Based on multiple well-designed studies, decisions regarding the effect of the practice of full integration on the academic achievement of general education students can be made.

Fourth Grade Students' Attitudes

Research supports the findings of this study, that students who are exposed to classmates with disabilities have better attitudes toward persons with disabilities than students who are not exposed to persons with disabilities. Learning the effect that a program has on its participants' attitudes is an important facet of research and should be a corollary to other studies. In future studies, researchers might consider developing an instrument (attitude questionnaire) appropriate for use with students in the primary grades.

Additionally, researchers might gather longitudinal data on students who were members of inclusive classes. This data could reveal if students' vocational choices and attitudes toward persons with disabilities were affected by their childhood experience.

Parent, Staff, and Student Attitudes

It is important, when implementing a new program and conducting a formative analysis, to get input from all the stakeholders--parents, staff, and students. Although valuable information can be obtained from written questionnaires and surveys, personal interviews, such as those conducted with a random sample of students in this research, allow the researcher to clarify questions and sense the sincerity of the respondents. In future research, a random sample of participants might be interviewed (as were 18 students in the present study). When the interviewer is the primary researcher (as in the present study), there is the danger that it will bias the respondents' answers. The possibility of bias could be eliminated if a neutral observer conducted the interviews.

A study on first graders' perspectives on a part-time mainstream student (Schnorr, 1990) illustrates the value of seeking and learning from student perspectives. Schnorr states,

Even very young students . . . have important insights that are different from those of the adult members in their setting. Students are the

only legitimate source for some of the answers we need for understanding and promoting school inclusion, because it is their world, not ours, that defines it. (p. 240)

In future research, interviews with students from control classes would provide a means of comparing the responses of students not directly exposed to a student with severe disabilities with responses of students in fully-integrated classes.

Advantages to the questionnaire, such as the staff and parent questionnaires used in this study, include the (sometimes painful) honesty of the respondents and the volume of respondents which can be questioned. As in this research, it is important to seek feedback from those directly involved in the program as well as from those who may seem only remotely affected by the program (e.g., staff members who were not directly involved and parents of all students in the integrated classes).

Social Interaction

Comparative studies suggest that some integrated environments facilitate social interactions for young

children with disabilities (Buysse & Bailey, 1993).

Furthermore, integrated settings generally have not been shown to be detrimental with respect to developmental outcomes in these children. The challenge for both research and practice will be to focus on the quality of those interactions and determine how peers contribute to a child's total development. (p. 458)

To ensure positive outcomes when students with varying abilities are schooled in the same classrooms, it is vital to study the interactions which occur between students in these settings. Future research may provide data which will assist teachers and other decision makers in planning programs where optimum learning and positive interactions can occur and benefit all students.

Adaptive Behavior

There is a void in the research regarding the acquisition of adaptive behavior skills of students with severe disabilities in inclusive environments. It is an area vital to the future of inclusion and

integration. If students with severe disabilities are not gaining optimum skills in those areas which will benefit them, then adjustments must be made within the general education setting or consideration must be given to providing certain services outside general education.

IEP Skill Acquisition

Analyzing the proportion of IEP objectives mastered did not provide the valuable information that might be obtained by analyzing the quality of the IEP objectives systematically. In future research, the IEP objectives of students who are included fully in general education classrooms might be compared to those of students who are in segregated environments.

Teachers' Time-Task Demands

Analyzing which behaviors made demands on teachers' time provided important information regarding the full-integration process. A more accurate means of gathering data, rather than by the teachers' self-reporting, might be for observers to maintain logs of teachers' activities in both experimental and control

classes. This could be attained by the observers' being present in the classrooms or by their watching videotapes of classroom activities.

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APPENDIX A

A Model for the Full Integration of SPD Students in Age-Appropriate Elementary School Classrooms

A Model for the Full Integration of SPD Students in
Age-Appropriate Elementary School Classrooms

Number of SPD students: six

Grade Levels

- . First (two students in two classes)
- . Second (one student)
- . Third (one student)
- . Fourth (two students in two classes)

Selection Criteria

- . Age-appropriate for the grade
- . Resides within the cluster of schools in the immediate area (There were no students for whom this would be their neighborhood school.)

First grade was an exception to this criterion.

As there were teachers anxious to participate and no age-appropriate students within the cluster, students were chosen outside the immediate area.

- . Teachers volunteered to participate; assistants were assigned.

Support Staff

- . One support person per fully-integrated student. . . .
five assistants and one SPD teacher

- . The SPD teacher coordinates the schedules of the support staff.
- . Assistants were initially assigned to work with one student while the SPD teacher was also assigned to work in one classroom for most of the day.
- . As teachers felt more comfortable, one assistant was assigned to rotate between two fourth grade classes to give the SPD teacher the latitude to oversee the program and to be actively involved in the development of the SPD students' IEPs.
- . One assistant was eliminated early in the program, as one first grade teacher felt comfortable without a full-time assistant. (This teacher was assisted by the SPD teacher, other assistants, and therapists as needed.)

Curriculum

- . Planning is done by teams consisting of the child's teacher, the SPD teacher, and support personnel.
- . IEP objectives are reviewed by teachers. Logs, with objectives listed, are kept readily available for the classroom teacher, the assistant, or the SPD teacher to note mastery.

- . The general education teachers' daily plans reflect areas where the SPD students can be involved. The support teacher or assistant can review the classroom teachers' plans to plan for adjusting activities when necessary.

IEP Development

- . The SPD teacher who is coordinating the students' schedules has the primary responsibility for developing the IEPs with the parents, the general education classroom teachers, and support personnel.
- . The students began the year, 1992-1993, using the current IEP which had been developed not more than one year ago.
- . IEPs for the current school year must be developed by the end of the first quarter, November 3, 1992.

Administrative Support

- . The building principal is providing leadership for the program, assisting with coordinating staff meetings, making initial parent contacts, providing materials, arranging a college-credit class, and serving as a liaison with the Office of Special Education Services.
- . The building-level special education coordinator

serves in a similar capacity under the direction of the principal.

- . The director of special education services and the special education coordinator assigned to serve this school are available to handle issues which affect the school division.

Planning/Preparation for Full Integration

- . Initial planning began in the summer of 1991.
- . The concept was introduced to the teachers in the fall of 1991.
- . Specific plans/ideas were presented to/solicited from the staff beginning in February, 1992.
- . Staff meetings/parent meetings/discussions/question-answer sessions were held February through June, 1992.
- . Teachers met with the principal in July and August, 1992, to finalize plans--including selecting staff and students, soliciting parent approval, adjusting cover sheets on IEPs, and working together to develop some activities.

APPENDIX B
Chedoke-McMasters Questionnaire
(CATCH Survey)

1. I wouldn't worry if a handicapped child sat next to me in class.

<input type="radio"/> strongly disagree	<input type="radio"/> disagree	<input type="radio"/> can't decide	<input type="radio"/> agree	<input type="radio"/> strongly agree
---	--------------------------------	------------------------------------	-----------------------------	--------------------------------------
2. I would not introduce a handicapped child to my friends.

<input type="radio"/> strongly disagree	<input type="radio"/> disagree	<input type="radio"/> can't decide	<input type="radio"/> agree	<input type="radio"/> strongly agree
---	--------------------------------	------------------------------------	-----------------------------	--------------------------------------
3. Handicapped children can do lots of things for themselves.

<input type="radio"/> strongly disagree	<input type="radio"/> disagree	<input type="radio"/> can't decide	<input type="radio"/> agree	<input type="radio"/> strongly agree
---	--------------------------------	------------------------------------	-----------------------------	--------------------------------------
4. I wouldn't know what to say to a handicapped child.

<input type="radio"/> strongly disagree	<input type="radio"/> disagree	<input type="radio"/> can't decide	<input type="radio"/> agree	<input type="radio"/> strongly agree
---	--------------------------------	------------------------------------	-----------------------------	--------------------------------------
5. Handicapped children like to play.

<input type="radio"/> strongly disagree	<input type="radio"/> disagree	<input type="radio"/> can't decide	<input type="radio"/> agree	<input type="radio"/> strongly agree
---	--------------------------------	------------------------------------	-----------------------------	--------------------------------------
6. I feel sorry for handicapped children.

<input type="radio"/> strongly disagree	<input type="radio"/> disagree	<input type="radio"/> can't decide	<input type="radio"/> agree	<input type="radio"/> strongly agree
---	--------------------------------	------------------------------------	-----------------------------	--------------------------------------
7. I would stick up for a handicapped child who was being teased.

<input type="radio"/> strongly disagree	<input type="radio"/> disagree	<input type="radio"/> can't decide	<input type="radio"/> agree	<input type="radio"/> strongly agree
---	--------------------------------	------------------------------------	-----------------------------	--------------------------------------
8. Handicapped children want lots of attention from adults.

<input type="radio"/> strongly disagree	<input type="radio"/> disagree	<input type="radio"/> can't decide	<input type="radio"/> agree	<input type="radio"/> strongly agree
---	--------------------------------	------------------------------------	-----------------------------	--------------------------------------
9. I would invite a handicapped child to my birthday party.

<input type="radio"/> strongly disagree	<input type="radio"/> disagree	<input type="radio"/> can't decide	<input type="radio"/> agree	<input type="radio"/> strongly agree
---	--------------------------------	------------------------------------	-----------------------------	--------------------------------------
10. I would be afraid of a handicapped child.

<input type="radio"/> strongly disagree	<input type="radio"/> disagree	<input type="radio"/> can't decide	<input type="radio"/> agree	<input type="radio"/> strongly agree
---	--------------------------------	------------------------------------	-----------------------------	--------------------------------------
11. I would talk to a handicapped child I didn't know.

<input type="radio"/> strongly disagree	<input type="radio"/> disagree	<input type="radio"/> can't decide	<input type="radio"/> agree	<input type="radio"/> strongly agree
---	--------------------------------	------------------------------------	-----------------------------	--------------------------------------
12. Handicapped children don't like to make friends.

<input type="radio"/> strongly disagree	<input type="radio"/> disagree	<input type="radio"/> can't decide	<input type="radio"/> agree	<input type="radio"/> strongly agree
---	--------------------------------	------------------------------------	-----------------------------	--------------------------------------

13. I would like having a handicapped child live next door to me.
☐ strongly disagree ☐ disagree ☐ can't decide ☐ agree ☐ strongly agree
14. Handicapped children feel sorry for themselves.
☐ strongly disagree ☐ disagree ☐ can't decide ☐ agree ☐ strongly agree
15. I would be happy to have a handicapped child for a special friend.
☐ strongly disagree ☐ disagree ☐ can't decide ☐ agree ☐ strongly agree
16. I would try to stay away from a handicapped child.
☐ strongly disagree ☐ disagree ☐ can't decide ☐ agree ☐ strongly agree
17. Handicapped children are as happy as I am.
☐ strongly disagree ☐ disagree ☐ can't decide ☐ agree ☐ strongly agree
18. I would not like a handicapped friend as much as my other friends.
☐ strongly disagree ☐ disagree ☐ can't decide ☐ agree ☐ strongly agree
19. Handicapped children know how to behave properly.
☐ strongly disagree ☐ disagree ☐ can't decide ☐ agree ☐ strongly agree
20. In class I wouldn't sit next to a handicapped child.
☐ strongly disagree ☐ disagree ☐ can't decide ☐ agree ☐ strongly agree
21. I would be pleased if a handicapped child invited me to his house.
☐ strongly disagree ☐ disagree ☐ can't decide ☐ agree ☐ strongly agree
22. I try not to look at someone who is handicapped.
☐ strongly disagree ☐ disagree ☐ can't decide ☐ agree ☐ strongly agree
23. I would feel good doing a school project with a handicapped child.
☐ strongly disagree ☐ disagree ☐ can't decide ☐ agree ☐ strongly agree
24. Handicapped children don't have much fun.
☐ strongly disagree ☐ disagree ☐ can't decide ☐ agree ☐ strongly agree
25. I would invite a handicapped child to sleep over at my house.
☐ strongly disagree ☐ disagree ☐ can't decide ☐ agree ☐ strongly agree

26. Being near someone who is handicapped scares me.
- ()strongly disagree ()disagree ()can't decide ()agree ()strongly agree
27. Handicapped children are interested in lots of things.
- ()strongly disagree ()disagree ()can't decide ()agree ()strongly agree
28. I would be embarrassed if a handicapped child invited me to his birthday party.
- ()strongly disagree ()disagree ()can't decide ()agree ()strongly agree
29. I would tell my secrets to a handicapped child.
- ()strongly disagree ()disagree ()can't decide ()agree ()strongly agree
30. Handicapped children are often sad.
- ()strongly disagree ()disagree ()can't decide ()agree ()strongly agree
31. I would enjoy being with a handicapped child.
- ()strongly disagree ()disagree ()can't decide ()agree ()strongly agree
32. I would not go to a handicapped child's house to play.
- ()strongly disagree ()disagree ()can't decide ()agree ()strongly agree
33. Handicapped children can make new friends.
- ()strongly disagree ()disagree ()can't decide ()agree ()strongly agree
34. I feel upset when I see a handicapped child.
- ()strongly disagree ()disagree ()can't decide ()agree ()strongly agree
35. I would miss recess to keep a handicapped child company.
- ()strongly disagree ()disagree ()can't decide ()agree ()strongly agree
36. Handicapped children need lots of help to do things.
- ()strongly disagree ()disagree ()can't decide ()agree ()strongly agree

APPENDIX C
Parent Questionnaire
Full-Integration Program
Spring 1993

Pembroke Elementary School

4622 JERICO ROAD
VIRGINIA BEACH, VIRGINIA 23462

280

ARTHUR W. TAYLOR
SPECIAL EDUCATION
PROGRAM COORDINATOR

NANCY C. ROSENBLATT
PRINCIPAL

JOANNE T. D'AGOSTINO
ASSISTANT PRINCIPAL

April 30, 1993

Dear Parents,

Last fall, the Educational Planning Center for Virginia Beach City Public Schools gave me permission to study our pilot full-integration program. It would be most helpful if you would take a few minutes to answer the attached questionnaire. Should you like to make additional comments, feel free to use the back of the form or attach pages. If you have any questions, do not hesitate to call me at 473-5025.

Should you wish to know the results of the survey, please contact me. I appreciate your taking the time to respond to these questions. Please return the questionnaire to your child's teacher.

Sincerely,

Nancy C. Rosenblatt
Nancy C. Rosenblatt

**PARENT QUESTIONNAIRE
FULL-INTEGRATION PROGRAM
SPRING 1993**

Please check one of the following:

- ☐ My child is severely disabled (SPH).
☐ My child is not severely disabled.

Please check one response to complete these statements.

I am this child's

- ☐ Mother
☐ Father
☐ Grandmother
☐ Grandfather
☐ Other (explain) _____.

I am

☐ White ☐ African-American ☐ Hispanic ☐ Asian/Pac. Islander

My child (the one who brought the survey home) is in grade _____.

Answer the following questions:

Yes No Unsure

1. Are you aware that a student with a severe disability is in your child's class?
2. Is the program successful?
3. Has your child benefitted by having the child with a severe disability in his class?
4. Has he been harmed in any way?
5. Are there any effects beyond class time?
(If yes, use the space below to describe them.)
6. Are you aware that there is a full-time assistant or an additional teacher in the room for the majority of the day?
7. As a taxpayer, do you feel this program is worth the extra money it might cost?
8. Do you feel the program should continue?

Effects beyond class time: _____

Recommendations/comments: _____

YOUR NAME (OPTIONAL) _____

APPENDIX D
Staff Questionnaire
Full-Integration Program
Spring 1993

**STAFF QUESTIONNAIRE
FULL-INTEGRATION PROGRAM
SPRING 1993**

Please check one of the following:

- ☐ I am a general education teacher in a class with a fully-integrated severely disabled student.
Choose one. ☐ Primary, K-2 ☐ Upper elementary, 3-5
- ☐ I am a general education teacher in a class with no fully-integrated severely disabled child.
Choose one. ☐ Primary, K-2 ☐ Upper elementary, 3-5
- ☐ I am a special education teacher.
- ☐ I am a teacher's assistant who works with severely disabled children who are fully integrated.
- ☐ I am a special education teacher's assistant who does not work with a fully-integrated child.
- ☐ I am a general education teacher's assistant who does not work with a fully-integrated student.
- ☐ I am a resource teacher who works primarily with general education students.
- ☐ I am a resource teacher who works primarily with special education students.
- ☐ I am an administrator.
- ☐ Other (explain) _____

1. Was the full-integration program successful?

() Yes () No () Unsure

2. Should the program continue?

() Yes () No () Unsure

If you were directly involved in the full-integration program, please answer questions 3-10. If you were not, you may skip to questions 11-12.

3. Why were you involved in the program? _____

4. What was the most difficult aspect of the program? _____

5. What was the best aspect of the program? _____

6. Note knowledge and/or skills that were attained by the general education students in your class. _____

OVER

7. Note knowledge and/or skills that were attained by the SPH student who was integrated in your general education class.

8. Were academic outcomes of general education students adversely affected by the presence of an SPH student in the class? _____
If "yes," how were they affected? _____

9. Did the SPH student in the class put extra demands on the general education teacher's time? _____ If "yes," what were they? _____

10. Were there effects beyond class time? _____ If "yes," describe them. _____

11. What recommendations do you have? _____

12. What guidelines should be included in the plan for 1993-1994?

General Comments

PLEASE RETURN THIS QUESTIONNAIRE TO CAROL BLIEFERNICH BY THURS. PM
MRS. BLIEFERNICH HAS BEEN ASKED BY THE FACULTY COUNCIL TO WORK WITH
A COMMITTEE OF INTERESTED STAFF MEMBERS TO DEVELOP A PLAN FOR NEXT
YEAR.

IF YOU WOULD LIKE TO SERVE ON THE FULL-INTEGRATION ACTION TEAM
(FIAT) TO PLAN FOR NEXT YEAR, LET CAROL KNOW. (ROOM #4 OR HER
MAILBOX) THE FIRST MEETING OF "FIAT" WILL BE AT 8:00 WED,
MAY 5, IN ROOM #4.

APPENDIX E

Educational Assessment of Social Interaction

(E.A.S.I.)

EDUCATIONAL ASSESSMENT OF SOCIAL INTERACTION
(E.A.S.I.)

An observational checklist for measuring social interactions
between nondisabled and severely disabled students
in integrated settings

by

Lori Goetz, Ph.D.

Tom Haring, Ph.D.

and

Jacki Anderson, Ph.D.

The EASI was developed through the cooperative
efforts of San Francisco State University and San
Francisco Unified School District.

Wayne Sailor, Ph.D. - Principal Investigator

Date: _____ Settings: _____ Time Start: _____ Time Finish: _____

Time sample: 20 seconds observe, 20 seconds record, for 10 consecutive minutes Scorer: _____

Nondisabled Interactors		OBSERVE: I A S H T O 1 2						
1	1:00-1:20							
2	1:40-2:0							
3	2:20-2:4							
4	2:00-2:2							
5	2:40-3:0							
6	3:20-3:4							
7	4:00-4:2							
8	4:40-5:0							
9	5:20-5:4							
10	6:00-6:2							
11	6:40-7:0							
12	7:20-7:4							
13	8:00-8:2							
14	8:40-9:0							
15	9:20-9:4							
Total								

Sev. Disabled Student		I A S H T O 1 2							WIK/ACTIVITY	
1										
2										
3										
4										
5										
6										
7										
8										
9										
10										
11										
12										
13										
14										
15										
Total										

Figure 1

Using the EASI

288

Data Collection Sheet and Instructions for Use. The EASI measures social interactions in terms of four major dimensions: 1) Role (Initiate/Acknowledge, scored as I/A); 2) Purpose (Social, Helping, Teaching, scored as S/H/T); 3) Topography (Isolate, Inappropriate behavior directed to others, Inappropriate behavior directed to self, scored as ○ / ? / ⊙); and 4) Descriptive information (Who/Activity, scored in anecdotal form). Specific definitions and scoring criteria for each of these categories are discussed in detail below.

Figure 1 presents a sample data collection sheet. Data collection follows a 20 seconds observe, 20 seconds record, time sampling format. Each horizontal row within an observational block (Rows 1-15) represents 20 seconds of observation of one severely disabled student and all nondisabled interactors with that student. Within each horizontal row, the right half of the row is used to score the behaviors of the severely disabled student under observation. The left half of the row is used to score the behavior of all nondisabled interactors.

All categories of behavior for both the nondisabled and severely disabled person(s) observed during each 20 second observation are scored according to criteria discussed below.

The leftmost column of numbers (:00-:20) represents the beginning and ending seconds of each observational interval. One set of observations (rows 1-15) thus represents a total of fifteen 20-second observations, or 5 minutes of observed behavior and ten total minutes spent observing and recording.

The data sheet also provides spaces to note the date, setting, and starting and stopping times of each observation. Although designed for use in integrated contexts such as recess or the cafeteria, scoring can also be done within classroom contexts.

Scoring Protocol. None of the categories below are mutually exclusive except for the Purpose of interaction category (e.g., an interaction purpose must be either social or helping or teaching). All other categories which occur during an observational interval are scored for that interval according to the criteria listed below.

I = Initiation Behavior. This category is used to note who initiates the interaction. An initiation is any cue or behavior directed from one person to another that results in a contact between the two persons. Initiations set the occasion for a social, helping, or teaching interaction response to occur and may be vocal/verbal or gestural in form. Eye contact may also serve as a form of initiation for severely physically disabled and/or nonverbal students. The purpose of the initiation column is to identify who started the interaction.

Within a 20-second observation period, either a nondisabled or a severely disabled student may initiate an interaction, or both may initiate interactions (the two interactions will be different, however, since two people cannot both initiate the same interaction). Only the first initiation (and the responses to it) within a 20-second observation is scored; however if both a nondisabled and a severely disabled student initiate toward one another, each initiation is scored.

A = Acknowledgement. An acknowledgement is any form of active behavior made in response to an initiation. Acknowledgements may take appropriate or inappropriate forms and do not necessarily have to look "social". For example, if a nondisabled student says, "Push the door" and the severely disabled student pushes, an acknowledgement is scored. If the severely disabled student does not push the door, but makes eye contact and smiles, an acknowledgement is still scored.

Only acknowledgements to the first initiation within a 20-second interval are scored. If no acknowledgement occurs, an N is scored and any other behavior categories that occur in that interval are recorded, i.e., if a student fails to acknowledge a greeting while she is engaged in self stimulation, N and (4) are both scored.

Purpose. The purpose of the interaction is scored only for the initiator of the interaction.

S = Social. A social interaction is any interaction between two people which does not meet the specific criteria of helping or teaching interactions as defined below, i.e., any interaction that is neither helping nor teaching is considered to be social. Any activities of daily living (e.g., self-help skills) that fall into helping or teaching categories are automatically excluded from the social category (e.g., two students may jointly participate in making a sandwich, but the purpose of this action is not social in nature).

H = Helping. A helping interaction is one in which the recipient is passive. In a helping interaction, either 1) no active responding is required, e.g., a nondisabled student pushes a severely disabled student in her wheelchair, or 2) a response is required but the severely disabled student is given no opportunity to independently perform the response, e.g., a nondisabled student requests "stand up" while simultaneously pulling the severely disabled student to his feet. Although a helping interaction does not require an active response, a severely disabled student may actively acknowledge a response, e.g., if a student is pushed around in her wheelchair (a helping interaction), the student might actively acknowledge the helping interaction with a smile.

T = Teaching. In a teaching interaction, the recipient is expected to make some self-initiated active response to the initiation (although the recipient may fail to actually make that response, in which case the teaching interaction might become a helping interaction). Teaching interactions are directive in nature: a specific response is expected. Teaching interactions may be focused on any content area, including daily living skills, etc. The one exception is the area of social play, when the purpose of an interaction is to maintain a play activity (social) rather than to direct performance of a specific play skill (teaching).

Topography. Any inappropriate topographies occurring in an interval are scored. These categories are scored regardless of whether or not they occurred as part of the specific interaction occurring in this interval. These categories are also scored even if no interaction occurred in the interval. If none of these categories are scored for an interval, it is assumed that the "climate" of the interval was positive and appropriate.

○ = Isolation. Isolation is defined as 10 consecutive seconds spent alone and not engaged in an appropriate isolate activity. Several types of isolation are possible. Voluntary isolation is not in response to any initiation, but rather occurs when the person deliberately removes himself from the opportunity to receive an initiation by walking away from others, turning his head to the wall, lying face down on the ground, etc. Isolation may also occur in response to a specific initiation, e.g., a student puts his head on the desk when asked a question. If isolation is a deliberate response to an initiation, isolation and acknowledgement are scored.

7 = Inappropriate to Others. Any inappropriate behavior directed to others. Topographies may include spitting, hitting, kicking, screaming, resisting assistance or contact, becoming passively floppy, etc. However, if an inappropriate response is made in response to an acknowledgement, it is scored only as an acknowledgement, i.e., inappropriate behaviors are scored only in addition to an acknowledgement or in the absence of an acknowledgement.

④ = Inappropriate to Self. Any self stimulatory or self abusive behavior falls into this category. Before observing a particular student, specific self-stimulatory or self-abusive behaviors should be noted.

APPENDIX F
Time/Task Log

DIRECTIONS FOR COMPLETING TIME/TASK LOG

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Review the suggested behaviors for specific skill areas listed below before beginning this exercise. Plan a few practice sessions before attempting to keep the log for a full day. Practice sessions should be completed sometime during December or early January. In late January, there will be a meeting for you to discuss any concerns you might have about using the instrument.

By March 1, each participant should have completed a log for at least one full day. At that time, there will be a follow-up training session to ensure that everyone is using the instrument in the same way. Prior to the end of the present school year, each participant will complete four time/task logs.

SUGGESTED BEHAVIORS FOR SPECIFIC SKILL AREAS

ASSESSMENT/EVALUATION

1. Preparing tests: Teacher locates information which will be on a test, quiz, or other assessment and develops and writes questions and/or directions.
2. Grading papers: Teacher scrutinizes written work, artwork or projects making notations which might include comments, corrections, suggestions, and/or grades.
3. Recording goals/objectives: Teacher makes a written note regarding an IEP goal or objective of a specific student. This might also include noting progress on objectives or goals for certain students who do not have IEPs (e.g. noting when a specific student has mastered forming the capital letter "K", in cursive).

PLANNING/PREPARATION OF

- A. Materials/Equipment for
 1. whole class: Teacher selects, adapts, and/or prepares materials and/or equipment with instruction of the whole class in mind.
 2. small group: Teacher selects, adapts, and/or prepares materials and/or equipment with the instruction of a small group or more than one small group in mind.
 3. individual student: Teacher selects, adapts, and/or prepares materials and/or equipment with the instruction of an individual student in mind.
- B. Lessons for
 1. whole class: Teacher writes lesson plans, instructional procedures, specific directions for teaching activities, and goals and objectives for direct instruction of the class.

2. small group: Teacher writes lesson plans, instructional procedures, specific directions for teaching activities, and goals and objectives for direct instruction of a small group.

3. individual student: Teacher writes lesson plans, instructional procedures, specific directions for teaching activities, and goals and objectives for a specific student.

INSTRUCTION

1. whole class: Teacher is involved in teaching basic (math, spelling, social studies, etc.) skills or other (vocational, social, self-help, etc.) skills or in observing/monitoring seatwork or other whole-class activities.

2. small group: Teacher is involved in teaching basic or other skills to a small group or in observing/monitoring a small group or the entire class when it's divided into small groups.

3. individual student: Teacher is involved in teaching basic or other skills to an individual student or in observing/monitoring one student.

BEHAVIOR MANAGEMENT

1. group intervention: Teacher intervenes to modify the behavior of the whole class (e.g. if there is too much noise).

2. individual intervention: Teacher intervenes to modify or correct the behavior of one student with excessive or deficient behavior. (This might include physical restraint, moving a student to and monitoring a time-out situation, individual counseling, or a verbal reminder.)

CONFERRING/CONSULTING W/

1. parents: Teacher discusses or otherwise communicates with the parent about a student. (This might include personal conferences, telephone conversations, or writing/reading notes... including making notes in a student planner or homework notebook.)

2. staff: Teacher discusses or otherwise communicates with school personnel (other teachers, paraprofessionals, bus drivers, counselors, administrators) about a student or a group of students.

NOTES

Teacher assistants will use the same form but only complete those sections which are applicable.

An activity is initiated when it begins; for example, if, during the hour 10:00-11:00, it is necessary to correct the behavior of three individual students, then, there should be three checks in that block. If one of those children is an SPH student, there would be two checks and one "0".

The time/task log should be kept on Tuesdays, Wednesdays or Thursdays. . . not Mondays or Fridays.

TIME/TASK LOG

Teacher/T.Asst. _____
 Grade _____
 SPH Student: Yes No _____
 No. of Students _____
 Date _____
 Day _____

C O N T R A C T D A Y 8:20-3:40
 Place ✓'s in blocks each time an activity is
 initiated for general education student(s);
 O's for SPH students. 295

Instructional Day 9:00-3:15

	Before School (No. of min.)	8:20 9:00	9:00 10	10- 11	11- 12	12- 1	1- 2	2 - 3:15	3:15 3:40	After School (No. of min.)
ASSESSMENT/EVALUATION										
Preparing tests										
Grading papers										
Recording goals/ objectives										
PLANNING/PREPARATION OF										
A. Materials/Equipment for 1. whole class										
2. small group(s)										
3. individual student										
B. Lessons for 1. whole class										
2. small group(s)										
3. individual student										
INSTRUCTION										
Whole class										
Small group(s)										
Individual student										
BEHAVIOR MANAGEMENT										
Group intervention										
Individual intervention										
CONFERRING/CONSULTING W/										
Parents										
Staff										

COMMENTS: _____

